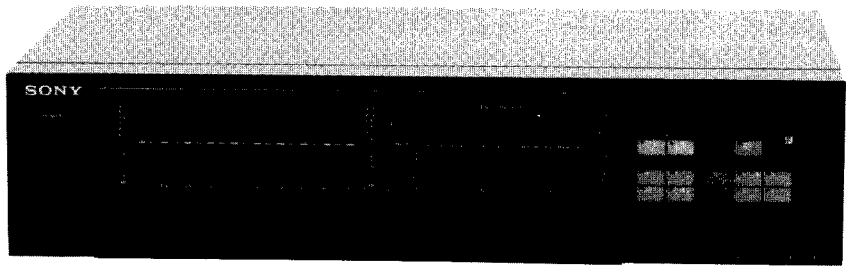
SEQ-555ES

SERVICE MANUAL

Refer to RM-31 Service Manual issued previously for information of remote commander supplied with this set.

US Model
Canadian Model
AEP Model
E Model



SPECIFICATIONS

Inputs (0 dBs = 0.775 V)

	Reference input level	Input impedance	Connector
MIC	———	Low impedance	Minijack
LINE IN	−10 dBs (245 mV)	50 kohms	Phono jack
AUX 1, 2	−10 dBs (245 mV)	50 kohms	Phono jack
TAPE 1, 2	−10 dBs (245 mV)	50 kohms	Phono jack

Outputs (0 dBs = 0.775 V)

	Reference output level	Max. output level	Load impedance	Connector
LINE OUT	−10 dBs (245 mV)	+19 dBs (6.91 V)	50 kohms	Phono jack
REC OUT 1, 2	−10 dBs (245 mV)	+19 dBs (6.91 V)	50 kohms	Phono jack

Frequency response MIC: Adjusted according to the supplied microphone
LINE: 10 Hz – 100 kHz $^{+0}_{-2}$ dB

Total harmonic distortion
LINE: Less than 0.006% (1 V output, 1 kHz)

Signal-to-noise ratio LINE: More than 97 dB (A network, flat, 1 V output)

Center frequencies 31.5 Hz, 63 Hz, 125 Hz, 250 Hz, 500 Hz, 1 kHz, 2 kHz, 4 kHz, 8 kHz, 16 kHz (for both graphic equalizer and spectrum analyzer)

Adjustable range L, R or L+R
±12 dB (2 dB step), ±6 dB (1 dB step) adjustable
Frequency response reverse function (CHARACTER button)

Gain 0 dB

Level adjustable range (at manual operation)
0 dB to −∞

Automatic sound field adjustment
Measuring level: About 74 dB SPL (at microphone position)
Measuring time: About 2 seconds for each channel after level reaches the measurable level
Number of measurements (averaged): Max. 16 times

Fixed memories
A: for rhythm music
B: for female vocal
C: for classical and mood music
FLAT: 0 dB (flat response)

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

MICROFILM

PROGRAM EQUALIZER

SONY®

AUD

General

Power requirement	120 or 240 V ac, adjustable, 50/60 Hz (AEP, E model) 120 V ac, 60 Hz (US, Canadian model)
Power consumption	25 watts
AC outlets (US, Canadian only)	
	2 switched, 450 watts max. 1 unswitched, 450 watts max.
Dimensions	Approx. 430 × 105 × 275 mm (w/h/d) (17 × 4¼ × 10⅞ inches) including projecting parts and controls
Weight	Approx. 5.2 kg (11 lb 8 oz) Approx. 6.5 kg (14 lb 5 oz) in shipping carton

FEATURES

The SEQ-555ES program equalizer is a system control center that provides you with maximum enjoyment from the world of audio-video presented by digital audio sources such as CD (Compact Disc) and PCM (Pulse Code Modulation), and by Hi-fi video. It also works as an ordinary graphic equalizer, allowing you to create your own original sound.

System selector for the AV era

Enriched input/output terminals, in line with the development of systems connected with AV (Audio-Video) units*, characterized by clear image and excellent tone quality, especially with a Hi-fi video unit connected.
Five input and three output channels, permitting signal switching with the SEQ-555ES main unit or with the supplied remote commander RM-31, are provided.

* As no video signal terminal is provided in the SEQ-555ES, it is not possible to process the video signal.

Automatic equalization

The flat frequency response of the playback, including the listening room and speaker, gives a reference for optimizing adjustment of each frequency band with the equalizer.
In the SEQ-555ES, the sound field is measured and analyzed by the built-in microprocessor combined with the microphone, supplied especially for sound field measurement. Adjustment inverse to the analysis result is automatically carried out so that the frequency response becomes flat at the measuring position.

Infrared remote commander

Each time adjustment is made by operating the equalizer switches and controls, the effect at the listening position must be checked with the conventional graphic equalizer.
However, ideally, adjustment should be carried out with the listener actually at the listening position.
The RM-31 remote commander makes this possible. In addition to on-band equalizer adjustment, it permits on/off control of the power supply (US, Canadian), input selection recall of memorized equalizer curves and sound volume control.

Memory permitting immediate recall of equalization

As it is difficult to determine the most appropriate levels of equalizer adjustment, four equalization curves of different types of music are stored in the fixed memory of the SEQ-555ES. Each curve can be recalled by one-touch operation of the corresponding key. Moreover, four memories are provided for storing original curves made by the user.

NOTES ON REPAIR

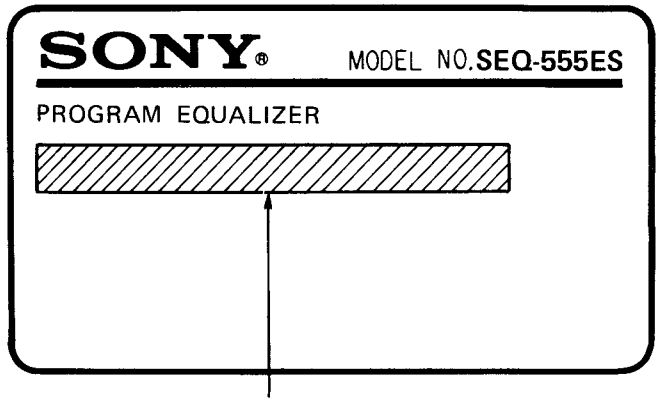
The frequency response of this set is adjusted to match the microphone. Therefore, frequency response adjustment is required when the microphone is replaced. (Refer to page 23, Frequency Response Adjustment.)

REPAIR CHECK POINTS

1. Before checking the microcomputers, be sure that power supply voltage is being properly applied and that the clock signal is being applied. Also confirm that the reset pin is high.
   Microcomputers A (IC751) and C (IC451) are controlled by microcomputer B (IC501).
2. Microcomputer A (IC751)
   This microcomputer controls key input and remote control input. It sends the data to microcomputer B when there is key input or remote control input.
   Checking is performed as follows.
   - Data should be output at pin (11) when the power supply plug is pulled and then plugged in again.
   - Pin (5) and (16) interrupt signals should be generated when any key is pressed.
   - A microcomputer clock signal (4.19MHz) should be being applied to pin (7).
   - Confirm that pins (22) – (37) key scan signals are being output' (except for pins (24) and (25))
   - Pin (20) should be high level. When this pin is low, the key scan signal is not output and key input is not accepted.
   - Pins (1) – (4) are for accepting key input, so check that the key scan signal of any pin appears when a key is pressed.

3. Microcomputer C (IC451)
   Microcomputer C controls LED display, and should be checked when there are any abnormalities in LED display.
   - Pins (1) – (4) are input pins for data from microcomputer B. Check that data is applied to these pins when the power switch is turned on and off.
   - Check that signals are being output from output pins (22) – (41) .
4. Microcomputer B (IC501)
   This contorls microcomputers A and C and other IC's. Therefore, this microcomputer should also be checked when microcomputer A and/or C is thought to be defective.

MODEL IDENTIFICATION
– Specification Label –



US, Canadian model: 120V 60Hz 25W
AEP, E model: 120/220V ~ 50/60Hz 25W

SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

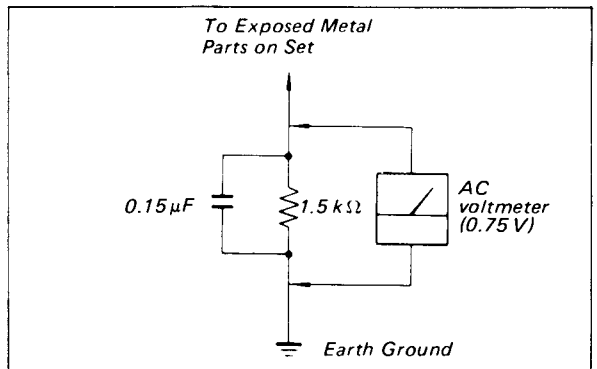
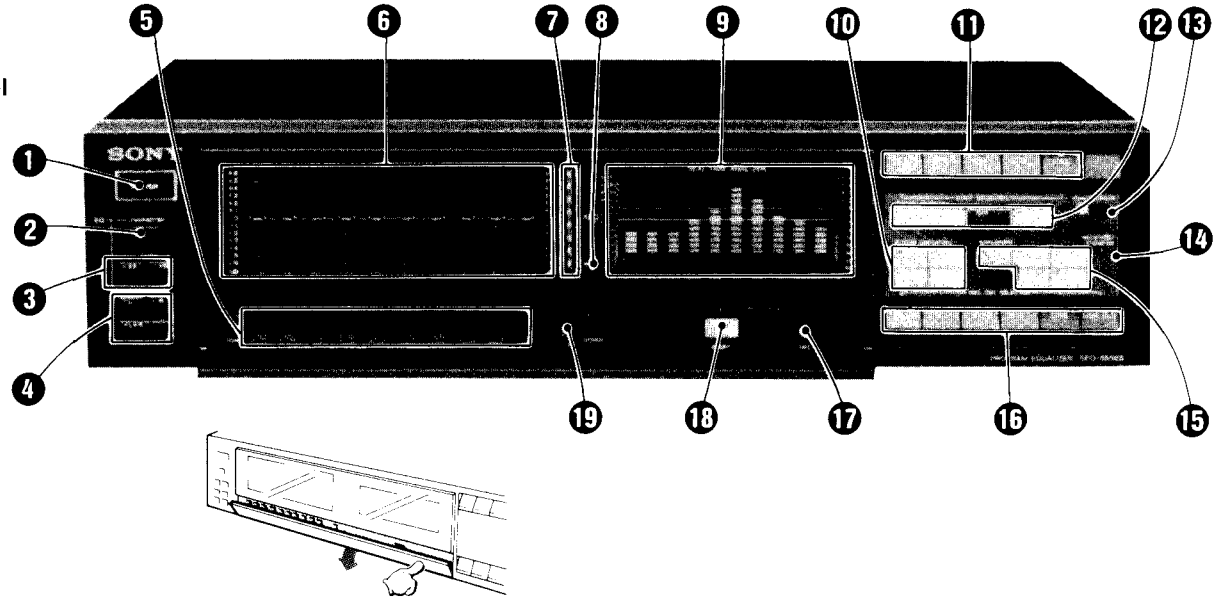


Fig. A. Using an AC voltmeter to check AC leakage.

LOCATION AND FUNCTION OF CONTROLS

Each number in the photo is keyed to descriptive text.

Front panel



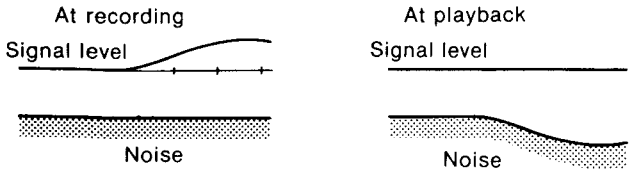
FRONT PANEL

❶ POWER switch

Press this switch to turn the power on.
Press it again to turn the power off.

❷ EQ (equalizer) CHARACTER switch

Press this switch to invert "+" and "−" of the equalizer curve. When this switch is pressed, the built-in indicator lights.
As a similar effect to the noise reduction system is obtained, hiss noise can be reduced if this switch is used at playback.
As tape hiss noise is a high frequency component, make a curve which gradually rises from 4 kHz and higher at recording. When this switch is pressed in playback mode, the curve is inverted to that at recording, and hiss noise is reduced.



When the equalization curve is inverted, the actual frequency response of the listening point is displayed.

❸ EQ (equalizer) LEVEL selectors

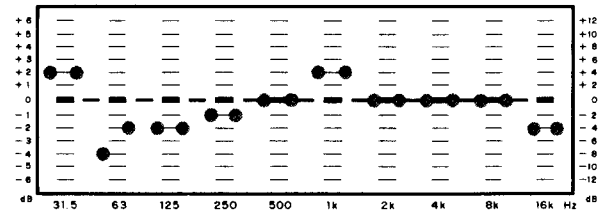
These buttons select the equalizer curve level adjusting ranges.

±6 dB: Fine correction in 1 dB steps. When this button is pressed, the built-in indicator lights.

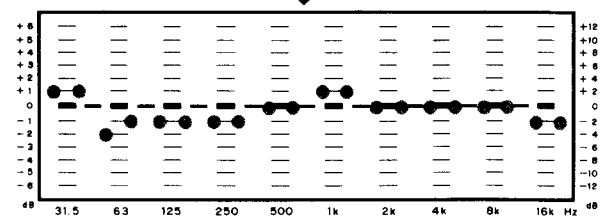
±12 dB: Correction in 2 dB steps. When this button is pressed, the built-in indicator lights.

When the range is switched to ±12 dB while indication is in the ±6 dB range, −1 dB is added to the odd setting in the positive (+) and the negative (−) directions.

±6 dB indication



±12 dB indication



When a point over 8 dB is included in the indication of 12 dB, the ±6 dB button is not accepted even if it is pressed, and the indicator built in the ±6 dB button blinks. When the BEEP switch (rear panel) is ON, a beep tone is emitted, notifying key-in operation is not accepted.

❹ EQ (equalizer) MODE selectors

These buttons select the equalization modes: simultaneously in left and right channels, and separately.

L: Press this button to equalize the left channel independently. The built-in indicator lights.
In the equalizer display, only the yellow indicators are lit.

R: Press this button to equalize the right channel independently. The built-in indicator lights.
Only the red indicators are lit in the equalizer display.

L+R: Press this button to equalize left and right channels simultaneously at the same step.
The built-in indicator lights. In the equalizer display, both yellow (left channel) and red (right channel) indicators are lit.

❺ UP/DOWN (equalizer level adjust) buttons
These buttons correct each frequency band of the graphic equalizer display.

❻ Graphic equalizer display
This indicates the curves of automatic equalization and adjustment with the equalizer. The yellow indicator shows the left channel level, and the red the right channel level. One graduation is 1dB when the ±6dB button of EQ LEVEL selector is being pressed, and 2dB when the ±12dB button is being pressed.

❼ LEVEL indicator
This shows the output level of the LINE OUT jacks.
Usually, set so that all the indicators are lit (0dB gain).
This shows the sound volume when the SEQ-555ES is used as an audio system selector.

❽ AEQ (automatic equalization) indicator
This indicator blinks when the level is too low in the sound field measurement and a signal of 1kHz does not reach the −5dB white line. In this case, increase the amplifier volume gradually so that the signal approaches the white line.
This indicator remains lit for one minute after the sound field is measured by pressing the START button.
If the START button is pressed again while this indicator is lit, the value averaged with the last measurement is input as a data.

❾ REAL TIME ANALYZER display
This is a 10-division real time analyzer, and the frequency band is the same as that of the graphic equalizer. It indicates the acoustic energy of sound field picked up by the microphone at sound field correction, and the acoustic energy of left and right channels of program source at adjustment with the equalizer.
The −5dB white line (thick line) shows the optimum level at equalization. For music playback, an environment where the external noise measured at sound field correction is lower than −5dB is required.

❿ FIXED MEMORY keys
These keys access the equalization curves for three kinds of music memorized. When the key is pressed, the corresponding built-in indicator lights.
A: Effective for jazz and rock
B: Effective for female vocal
C: Effective for classical and mood music
FLAT: The equalizer frequency response becomes flat.

⓫ INPUT SELECTOR buttons
These buttons select the input required.
The indicator of the pressed button lights.

LINE: Press this button to listen to the program source selected by the amplifier connected to the LINE IN jacks.
AUX 1, 2: Press these buttons to listen to the program source connected to AUX 1 and 2 jacks.
TAPE 1: Press this button to listen to the tape deck connected to the TAPE 1 jacks.
TAPE 2: Press this button to listen to the tape deck connected to the TAPE 2 jacks.

⓬ EQUALIZATION selector keys
These keys select the output to be equalized.
The indicator of the pressed key lights.
AEQ: Press this key to carry out equalizer adjustment after adjustment of sound field.
Press the AEQ key for normal playback through speakers.
LINE OUT: Press this key to equalize the program source to be listened to.
As sound field correction is not added, press the LINE OUT button for playback through headphones or for comparing two pairs of speakers.
OFF: Press this key when making no equalization.
When the OFF key is pressed, the indicator and graphic equalizer display related to the equalization go out.
REC OUT: Press this key to equalize only the signal to be recorded, without equalizing the current program source. Press the REC OUT key, and select the program source to be recorded by pressing the corresponding button of the REC OUT SELECTOR.

⓭ REMOTE SENSOR
The infrared beam transmitted by the supplied remote commander is received here.

⓮ Remote control signal indicator
This lights when the power cord is connected to a wall outlet, indicating the unit is ready to accept the remote control signal. It goes out when the POWER switch is pressed to turn on. It lights when the remote control signal is received.

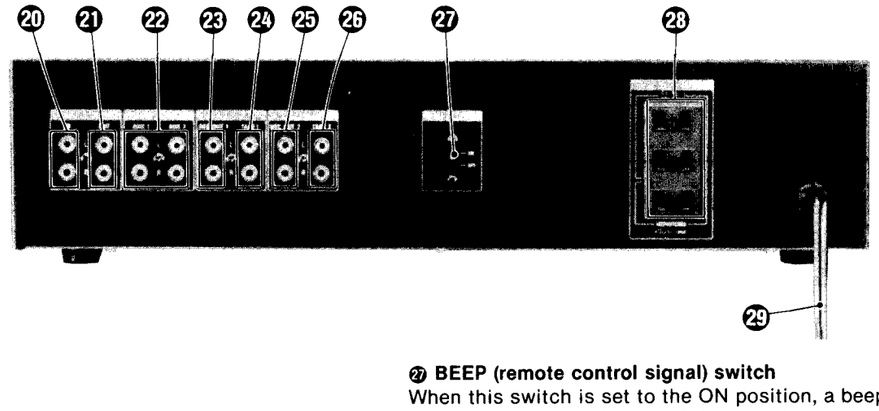
⓯ MEMORY keys
Press these keys to memorize the equalization curves.
SET: Press this key after the equalization curve to be memorized is determined. The built-in indicator lights for a few seconds. Memorize the curve during this period by pressing the corresponding [1]-[4] keys.
[1] [2] [3] [4]: Press these keys to memorize the required equalization curve, or recall the memorized curve.

⓰ REC OUT SELECTOR buttons
These buttons select the program source applied to the REC OUT jacks on the rear panel.
LINE OUT: Press this button to record the current sound as it is.
LINE: Press this button to record the source selected by the amplifier connected to the LINE IN jacks.

AUX 1, 2: Press this button to record from the program source connected to the AUX jacks.
TAPE 1 → 2: Press this button to copy from tape deck 1 to tape deck 2.
TAPE 2 → 1: Press this button to copy from tape deck 2 to tape deck 1.

⓱ AUTO EQ MIC jack (minijack)
Connect the supplied microphone for sound field measuring to this jack.

Rear panel
The photo shows type 2 model.



REAR PANEL

⓴ LINE IN jacks
Connect these jacks to the tape output jacks of the amplifier.

㉑ LINE OUT jacks
Connect these jacks to the tape input jacks of the amplifier.

㉒ AUX 1, 2 (auxiliary 1, 2) jacks
Connect these jacks to the audio output jacks of a CD player, etc.

㉓ TAPE RECORDER 1 REC OUT jacks
When only one tape deck is connected for recording, connect these jacks to the line input jacks of the deck.

㉔ TAPE RECORDER 1 TAPE jacks
When only one tape deck is connected for playback, connect these jacks to the line output jacks of the deck. To play a Hi-fi video, connect these jacks to the audio line output jacks of the video.

㉕ TAPE RECORDER 2 REC OUT jacks
When two tape decks are connected for recording in the second deck, connect these jacks to the line input jacks of the deck.

㉖ TAPE RECORDER 2 TAPE jacks
When two tape decks are connected for playing in the second deck, connect these jacks to the line output jacks of the deck.

⓲ AUTO EQ START button
Press this button to generate a pink noise from the built-in pink noise generator for sound field adjustment. When the sound field measuring microphone is connected, this button can be actuated. The pink noise is radiated from the left channel speaker, and then the right channel speaker. This pink noise is picked up by the microphone and input as a sound field data.

⓳ Level UP/DOWN button
When the SEQ-555ES is used as a system selector, this button is used for volume adjustment. The amplifier volume should be set to an attenuation of 20−30dB.

㉗ BEEP (remote control signal) switch
When this switch is set to the ON position, a beep tone is emitted when the button of the supplied remote commander is pressed. If a point of over 8dB is included in the indication of ±12dB, switching to ±6dB is not accepted and the beep tone is generated even if the ±6dB button is pressed. Set this switch to the OFF position when the beep tone is unnecessary.

㉘ AC OUTLETS (US, Canadian only)
These outlets are used for connecting the power cords of compact disc player, tuner, tape deck and other program sources. When the power cord of the equipment to be connected has a white mark indicating the polarity, connect the power cord so that the white mark comes to the left side of the outlet.
SWITCHED: This outlet interlocks with the POWER switch of the program equalizer: the power on/off of the connected equipment can be controlled by the POWER switch of the program equalizer, when the power switch of the connected equipment is set to ON.
This is convenient when the program source to be played frequently is connected to this outlet. The total power consumption is 450W.
UNSWITCHED: This outlet provides power irrespective of whether the POWER switch of the program equalizer is ON or OFF. Connect equipment with a power consumption of 450W maximum to this outlet.

㉙ Power cord

AUTO
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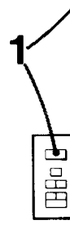

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AUX 1, 2: Press this button to record from the program source connected to the AUX jacks.
TAPE 1 → 2: Press this button to copy from tape deck 1 to tape deck 2.
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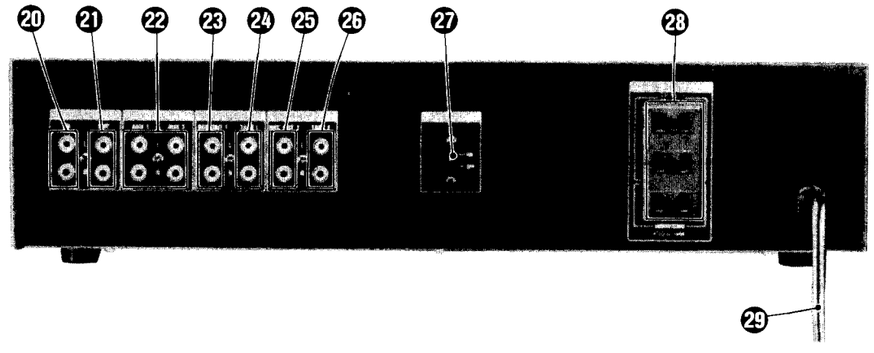
⑰ AUTO EQ MIC jack (minijack)
Connect the supplied microphone for sound field measuring to this jack.

Rear panel
The photo shows type 2 model.



REAR PANEL

⑳ LINE IN jacks
Connect these jacks to the tape output jacks of the amplifier.

㉑ LINE OUT jacks
Connect these jacks to the tape input jacks of the amplifier.

㉒ AUX 1, 2 (auxiliary 1, 2) jacks
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When two tape decks are connected for recording in the second deck, connect these jacks to the line input jacks of the deck.

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When two tape decks are connected for playing in the second deck, connect these jacks to the line output jacks of the deck.

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⑲ Level UP/DOWN button
When the SEQ-555ES is used as a system selector, this button is used for volume adjustment. The amplifier volume should be set to an attenuation of 20–30 dB.

㉗ BEEP (remote control signal) switch
When this switch is set to the ON position, a beep tone is emitted when the button of the supplied remote commander is pressed. If a point of over 8 dB is included in the indication of ±12 dB, switching to ±6 dB is not accepted and the beep tone is generated even if the ±6 dB button is pressed. Set this switch to the OFF position when the beep tone is unnecessary.

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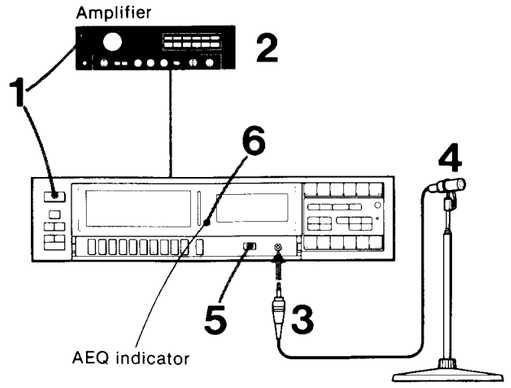
SWITCHED: This outlet interlocks with the POWER switch of the program equalizer: the power on/off of the connected equipment can be controlled by the POWER switch of the program equalizer, when the power switch of the connected equipment is set to ON.
This is convenient when the program source to be played frequently is connected to this outlet. The total power consumption is 450 W.
UNSWITCHED: This outlet provides power irrespective of whether the POWER switch of the program equalizer is ON or OFF. Connect equipment with a power consumption of 450 W maximum to this outlet.

㉙ Power cord

AUTOMATIC SOUND FIELD ADJUSTMENT



1 Press the POWER switches of the program equalizer and amplifier.
2 Set the volume level of the amplifier slightly higher than that for normal listening.
3 Connect the microphone to the MIC jack.
4 Place the microphone at your listening position.
5 Press the START button.
Pink noise is first emitted from the left speaker system and its level gradually increases. The AEQ indicator flickers. When the pink noise level reaches the reference level of −5 dB, the AEQ indicator steadily lights and noise is emitted for about 2 seconds. Then, pink noise is emitted from the right speaker system for about 2 seconds.
6 Even when pink noise stops, the AEQ indicator remains lit for about 1 minute.
After the AEQ indicator goes out, press the START button again.
7 Repeat step 6 at least once more.

Each time the data is obtained, the built-in microprocessor analyzes, compensates and memorizes the measured data.
Press the AEQ key to recall the compensated sound field data.

The graphic equalizer display indicates the sound field adjustment curve at the place at which the microphone is placed. After second adjustment, the measured data is added with the previous data.
To carry out automatic sound field adjustment effectively, obtain the data at least 3 times at the same position.
Data can be compensated and measured up to 16 times. More than 16 measurements cannot be accessed while the AEQ indicator remains lit. To resume adjustment, wait until the AEQ indicator goes off or turn the power off and on again.

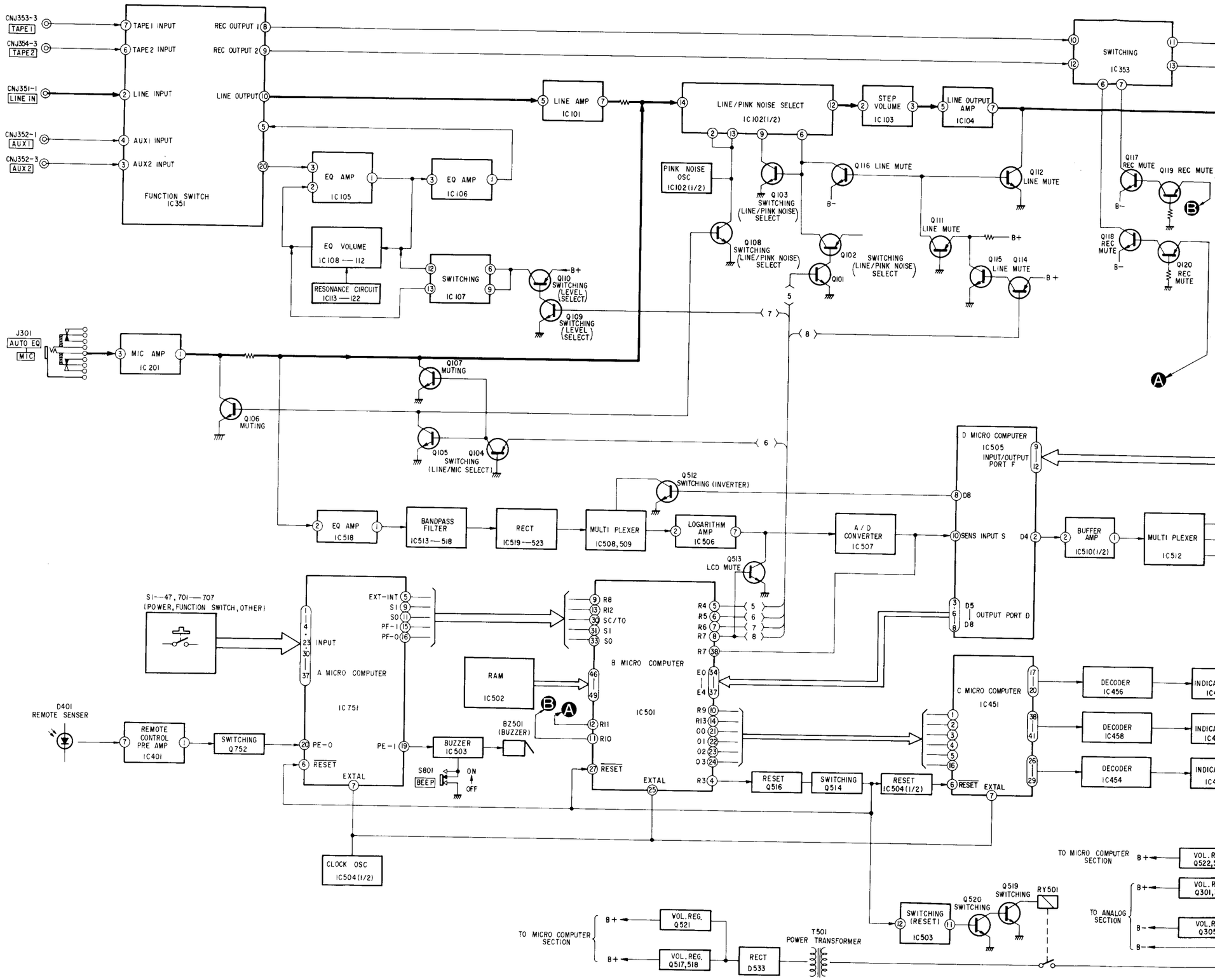
When automatic sound field adjustment is completed, return the amplifier volume control to the normal listening position.

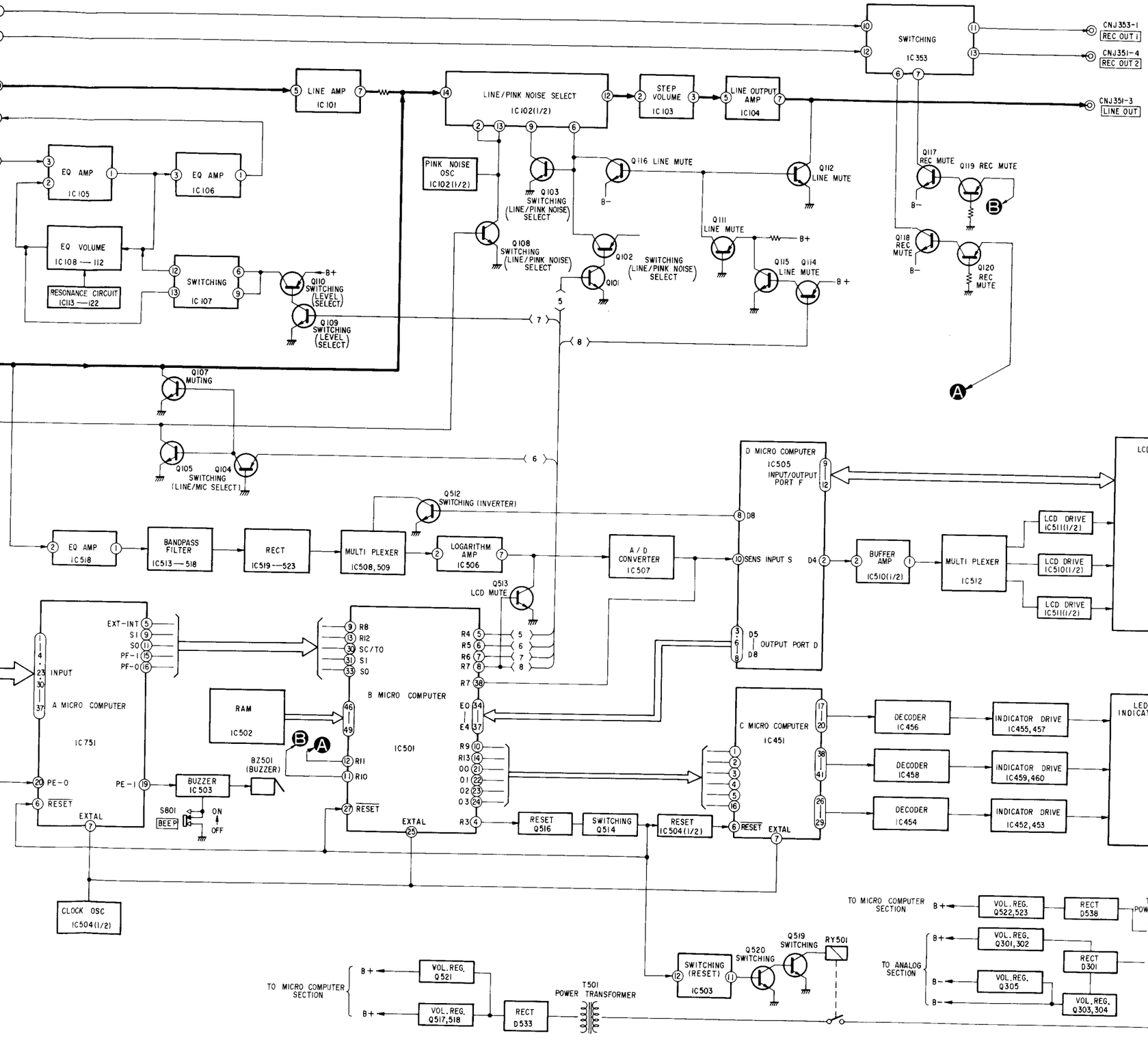
To observe the actual sound characteristics at your listening position
Press the CHARACTER button. The equalization curve is inverted to display the actual sound characteristics at your listening position. With this operation, you can see the sound characteristics of the audio system and listening room.

Notes
- Be sure to carry out automatic sound field adjustment before playing back the sound source. If the START button is pressed while playing the sound source, the acoustic energy remaining from the played sound source is added to the pink noise and correct sound field adjustment is not possible.
- When the level of the emitted pink noise is insufficient, the AEQ indicator remains flickering. In this case, increase the amplifier volume level.

SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM




SWITCHING IC353
CNJ353-1 REC OUT 1
CNJ351-4 REC OUT 2
CNJ351-3 LINE OUT
LINE AMP IC101
LINE/PINK NOISE SELECT IC102(1/2)
STEP VOLUME IC103
LINE OUTPUT AMP IC104
EQ AMP IC105
EQ AMP IC106
EQ VOLUME IC108 — 112
RESONANCE CIRCUIT IC113 — 122
SWITCHING IC107
PINK NOISE OSC IC102(1/2)
Q103 SWITCHING (LINE/PINK NOISE SELECT)
Q116 LINE MUTE
Q112 LINE MUTE
Q108 SWITCHING (LINE/PINK NOISE SELECT)
Q102 SWITCHING (LINE/PINK NOISE SELECT)
Q101
Q111 LINE MUTE
Q115 Q114 LINE MUTE
Q110 SWITCHING (LEVEL SELECT)
Q109 SWITCHING (LEVEL SELECT)
Q117 REC MUTE
Q119 REC MUTE
Q118 REC MUTE
Q120 REC MUTE
B+
B−
Q107 MUTING
Q105 Q104 SWITCHING (LINE/MIC SELECT)
EQ AMP IC518
BANDPASS FILTER IC513 — 518
RECT IC519 — 523
MULTI PLEXER IC508, 509
LOGARITHM AMP IC506
A/D CONVERTER IC507
Q512 SWITCHING (INVERTER)
Q513 LCD MUTE
D MICRO COMPUTER IC505 (INPUT/OUTPUT PORT F)
LCD UNIT
BUFFER AMP IC510(1/2)
MULTI PLEXER IC512
LCD DRIVE IC511(1/2)
LCD DRIVE IC510(1/2)
LCD DRIVE IC511(1/2)
SENS INPUT S
OUTPUT PORT D
A MICRO COMPUTER IC751
INPUT
EXT-INT
SI
SO
PF-I
PF-O
RESET
EXTAL
PE-O
PE-I
BUZZER IC503
BZ501 (BUZZER)
S801 BEEP ON OFF
B MICRO COMPUTER IC501
RAM IC502
R8
RI2
SC/TO
SI
SO
RI1
RI0
C MICRO COMPUTER IC451
DECODER IC456
DECODER IC458
DECODER IC454
INDICATOR DRIVE IC455, 457
INDICATOR DRIVE IC459, 460
INDICATOR DRIVE IC452, 453
LED INDICATOR
RESET Q516
SWITCHING Q514
RESET IC504(1/2)
CLOCK OSC IC504(1/2)
TO MICRO COMPUTER SECTION
VOL. REG. Q521
VOL. REG. Q517, 518
RECT D533
T501 POWER TRANSFORMER
SWITCHING (RESET) IC503
Q520 SWITCHING
Q519 SWITCHING
RY501
TO MICRO COMPUTER SECTION
VOL. REG. Q522, 523
RECT D538
T801 POWER TRANSFORMER
TO ANALOG SECTION
VOL. REG. Q301, 302
VOL. REG. Q305
RECT D301
VOL. REG. Q303, 304
AC IN

SECTION 2
CIRCUIT DESCRIPTION

CIRCUIT DESCRIPTION

This model employs 4 microcomputers, to control automatic acoustic compensation and frequency equalizer adjustment, etc.
The operation of each section is described below.

INPUT SECTION

$IC_{351,352}$ (CX-7977 are used for input source (LINE IN, AUX, etc.) selection.
These IC's are controlled by data from the microcomputers.
Their functions and features are explained below.

CX-7977

Features: This is a semiconductor switch with low distortion ratio containing two matrix circuits with 6 inputs and 3 outputs each, and control by digital signals is possible. Control is done by 11 bit or 8 bit serial data from a microcomputer, etc. and on this model it is performed by 11 bit data.

Functions:

$I_{1\sim6}$ (②~⑦, ㉓~㉘)	Audio signal input pin (6 inputs) x 2
$F_{1\sim3}$ (⑧~⑩, ⑳~㉒)	Audio signal output pin (3 outputs) x 2
CS (⑪)	Signal chip selection pin, selects when the 9th bit of serial data is the same level as the CS pin. "0" = Vss (⑭), "1" OPEN or V_{DL} (⑬)
M/S (⑫)	Serial data input mode switch pin, 11 bits for OPEN or V_{DL}.
V_{DL} (⑬)	Power supply (5V higher than Vss)
Vss (⑭)	Power supply (-14V)
Clock (⑮)	Clock signal input pin; takes in data at signal rise.
Data (⑯)	Serial data input pin.
Strobe (⑰)	Strobe signal input pin; latches data taken into the IC.
Lvref (⑱)	Sets control signal (clock, data, strobe) input level.
V_{DD} (⑲)	Power supply (+14V).

Data taken into the IC is input serially from the MSB (most significant bit).
The data is taken into the IC shift register at signal rise, the clock signal is stopped after input, the strobe signal pulse rises and data is transmitted to the latch. The contents of the data determine which switch goes on or off.

11 bit Control Data Structure

11	10	9	8	7	6	5	4	3	2	1
1	1	CS	R	L	F_2 F_3	F_1		$I_1\sim I_6$ data		

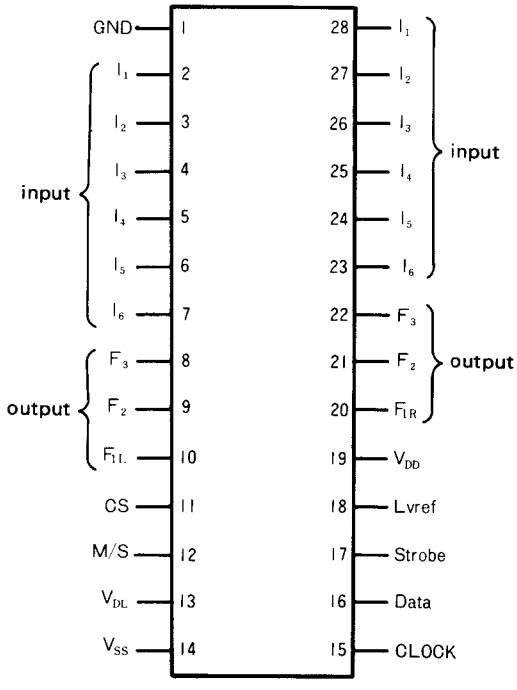
position	bit 8	7
no change	0	0
L	0	1
R	1	0
L + R	1	1

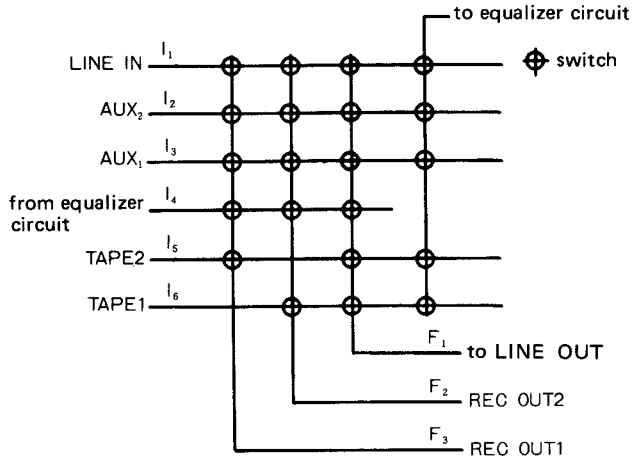
position	bit 6	5
no change	0	0
output F_1	0	1
output F_2 F_3	1	0
output F_1 F_2 F_3	1	1

position	bit 3	2	1
input I_1	0	0	0
I_2	0	0	1
I_3	0	1	0
I_4	0	1	1
I_5	1	0	0
I_6	1	0	1

F_2 and F_3 outputs are interlocked, and I_5 input signal is not output from F_2.
I_6 input signal is not output from F_3.
Both L and R channels can be used with this ASP IC, but on this model, L and R use one each, and the equalizer ON/OFF matrix is formed.
On this model the connections are as follows.

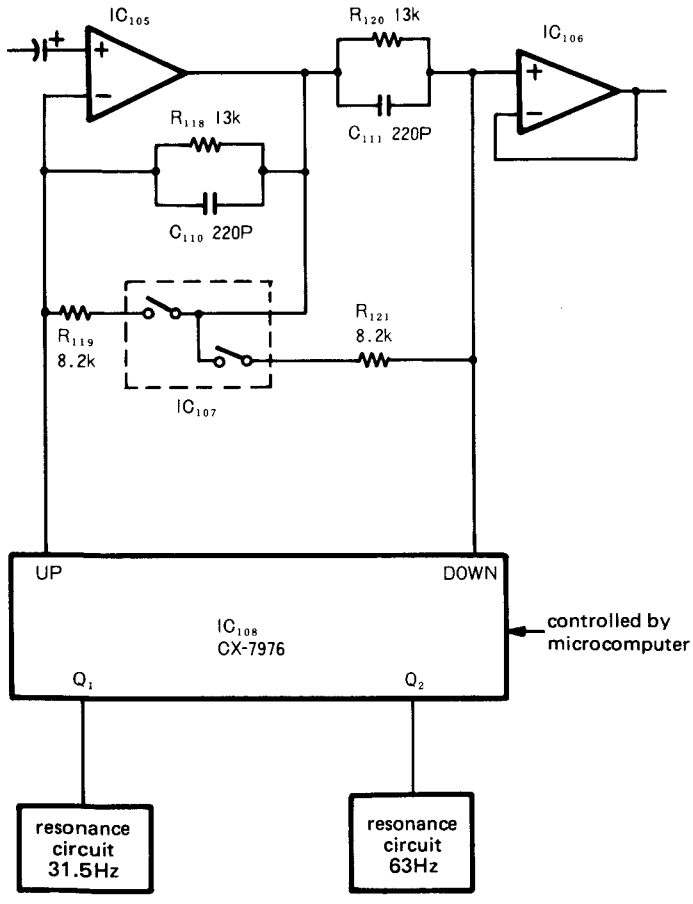
I_1	LINE IN	F
I_2	AUX_2	F_{1R} to equalizer circuit input
I_3	AUX_1	F_2 REC OUT1
I_4	from equalizer circuit output	F_3 REC OUT2
I_5	TAPE2	F_{1L} to buffer amp
I_6	TAPE1	





F_2 and F_3 are interlocked.

EQUALIZER CIRCUIT



The equalizer circuit is structured as shown in the above diagram, and actually, four IC's are connected parallel to IC_{108} and determine the frequencies. These IC's are controlled by microcomputer.
In the example above, many switches and resistors are connected inside IC_{108}, and because it is connected to the resonance circuits via these resistors, and the NF circuit is connected to these resonance circuits when it is on the UP side, the frequency component output gain becomes high. When DOWN, these resonance circuits connect to the attenuation circuit, so the frequency component gain drops. IC_{108} is controlled by microcomputer, and depending on the data sent from the microcomputer, can control only Q_1 or Q_2, or both.
The equalizer frequency is controlled by these combinations.
±6dB or ±12dB switching is done by IC_{107}. When IC_{107} internal switch is off, it is ±12dB, and ±6dB when on.

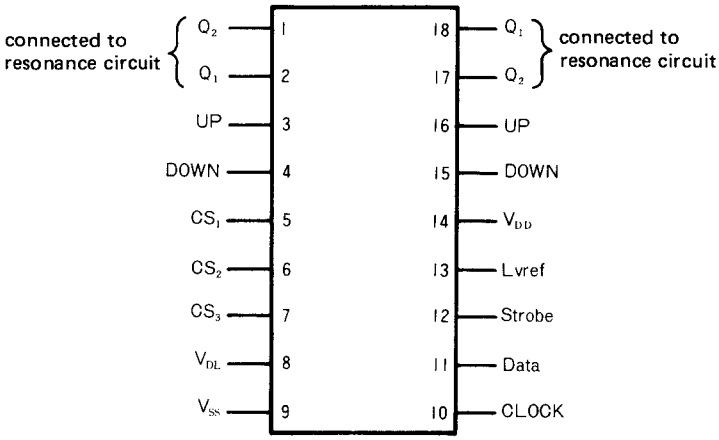
CX-7976

Features: This is a 2 channel independent variable 2dB step electronic volume for low distortion equalizer, containing two circuits which can obtain ±12dB attentuation. Control is done by 11 bit serial data from a microcomputer, etc.

Functions:

$Q_{1,2}$	(①, ②, ⑰, ⑱)	These pins are connected to L and R channel resonance circuits.
UP	(③, ⑯)	Connected to op amp inverted input.
DOWN	(④, ⑮)	Connected to op amp non-inverted input.
$CS_{1,2,3}$	(⑤, ⑥, ⑦)	Serial data bits 9, 10 and 11 are all selected at the same time as pins $CS_{1,2,3}$ level. "0" = Vss "1" = OPEN or V_{DL}
V_{DL}	(⑧)	Power supply (5V higher than Vss).
Vss	(⑨)	Power supply (-14V).
CLOCK	(⑩)	Clock signal input pin.
Data	(⑪)	Serial data input pin.
Strobe	(⑫)	Latches data taken into the IC at signal rise.
Lvref	(⑬)	Sets control signal (clock, data, strobe) input level.
V_{DD}	(⑭)	Power supply (+14V).

The 11 bit serial control data is input to the IC from the MSB (most significant bit).
Data is taken into the IC shift register at clock signal rise.
After data is taken in, the clock signal is stopped, and the strobe signal rises. The strobe signal transmits the data to the latch, and the data contents determine which switch is turned on or off.



Control Data Structure

11	10	9	8	7	6	5	4 3 2 1
CS_3	CS_2	CS_1	R	L	2	1	volume data

position	bit
	8 7
no change	0 0
L	0 1
R	1 0
L+R	1 1

position	bit
	6 5
no change	0 0
Q_1	0 1
Q_2	1 0
Q_1+Q_2	1 1

position	bit
	4 3 2 1
−12dB	0 1 1 0
−10	0 1 0 1
− 8	0 1 0 0
− 6	0 0 1 1
− 4	0 0 1 0
− 2	0 0 0 1
0	0 0 0 0
+ 2	1 0 0 1
+ 4	1 0 1 0
+ 6	1 0 1 1
+ 8	1 1 0 0
+10	1 1 0 1
+12	1 1 1 0

AUTOMATIC ACOUSTIC COMPENSATION

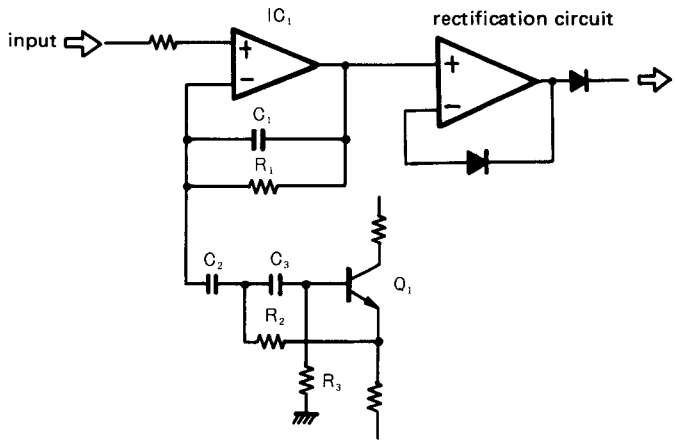
Pink noise is output from the oscillator inside this set and radiates from the speaker. These signals are input at the microphone, divided into 10 bands, measured and analyzed, then equalization is applied to flatten frequency response.

The signal input from the MIC jack is amplified at the IC_{201} mic amp circuit. (The frequency response is corrected at the same time.)

The amplified signal is applied to IC_{518}. The IC_{518} output signal is applied to the frequency filter circuits, then is rectified at the rectification circuit, passes the multiplexer circuit and is digitalized at the A/D converter, and is memorized in the RAM by microcomputer B.

The equalizer is controlled by this memorized content to flatten frequency response.

FILTER CIRCUIT



In the circuit above, the RLC resonance circuit is formed by Q_1, C_2, C_3, R_2 and R_3. IC_1, C_1, R_1 and the resonance circuit form a band pass filter.

C_2, C_3, R_2 and R_3 determine the center frequency.

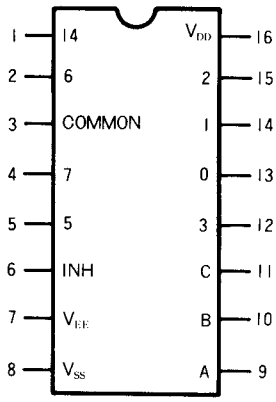
$$fo = \frac{1}{2\pi\sqrt{R_2R_3C_2C_3}}$$

After passing the filter circuit, it is converted to DC voltage by the rectification circuit. This DC voltage is applied to the A/D converter via the multiplexer.

$IC_{508,509}$ (MULTIPLEXER)

This is an input selection IC, and determines the pin to be selected by combinations of signals of pins ⑨, ⑩ and ⑪.
The truth table is given below.

⑥	⑨	⑩	⑪	ON Pin
INH	A	B	C	
L	L	L	L	0
L	L	L	H	1
L	L	H	L	2
L	L	H	H	3
L	H	L	L	4
L	H	L	H	5
L	H	H	L	6
L	H	H	H	7



DC voltage of the frequency selected at the multiplexer is sent to the A/D converter via the logarithmic amp.

IC_{505} (MICROCOMPUTER D)

The main functions of this microcomputer are A/D converter (IC_{507}) control and LCD display control. It operates independently of microcomputer B, and microcomputer B receives A/D converted data from microcomputer D only during acoustic compensation. Multiplexer control signals (③, ⑥~⑧) are output from microcomputer D and the frequency to be selected is determined.
Next, a start signal is sent from pin ⑲ to start the A/D converter.
When the A/D converter receives this signal, it divides that frequency voltage into a 6 bit (64 step) digital signal. When this conversion is completed, an END signal is output from the A/D converter. Then microcomputer D aplies 6 pulses to the CE pin. This pulse enables reception of the serial data output from A/D converter pin ③.
During acoustic compensation, microcomputer B receives this data, and stores the data in the RAM. This data is simultaneously sent by microcomputer C to the LCD display circuit and lights up the LCD. For other than acoustic compensation A/D conversion as LCD display data takes place.

Pin Functions

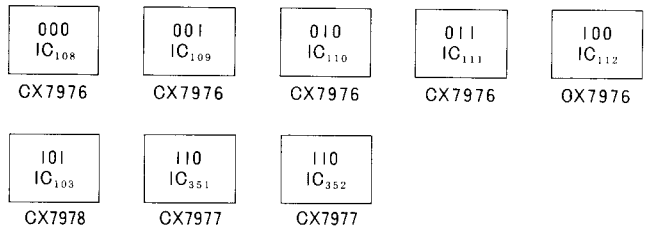
Pin ① : IC_{512} (multiplexer) switching signal.
Pin ② : LCD display use output signal.
Pin ③, ⑥~⑧: Output pins for frequency selection signal output.
Pin ⑨ : Strobe signal for LCD display.
Pin ⑩ : Clock signal output pin.
Pins ⑪, ⑫ : LCD display data output pin.
Pin ⑬ : Reset signal input pin.
Pin ⑯ : A/D converter END signal input pin.
Pin ⑰ : Data input from A/D converter.
Pin ⑱ : Chip enable output to A/D converter.
Pin ⑲ : Start signal output to A/D converter.

IC_{501} (MICROCOMPUTER B)

This microcomputer controls the entire system and interacts with microcomputers A, C and D to control them.

Pin Functions

Pins ①~③ control the 8 ASP IC's.
The upper 3 bits of each ASP IC correspond to the chip select pin (CS), and each pin is set as follows.



Pin ① : Output pin for ASP clock signal.
Pin ② : ASP data signal output pin.
Pin ③ : ASP strobe signal output pin.

Pins ①~③ control which IC is to be selected. $IC_{108\sim112}$ form the equalizer volume circuit, and by controlling these IC's, each frequency is controlled UP or DOWN. IC_{103} performs level UP/DOWN and operates as a 2dB step volume.
$IC_{351,352}$ are input selection IC's.
Pins ⑤~⑧ are analog signal switching signals, and are as follows:

Pin ⑤ :	PINK NOISE/LINE switching	H: PINK NOISE
Pin ⑥ :	MIC/LINE	H: MIC
Pin ⑦ :	±6dB/±12dB	H: ±6dB
Pin ⑧ :	MUTING	H: MUTING ON

Pins ⑤ and ⑥ are low except during acoustic compensation.
(Pin ⑦ can be switched between H/L.)
Pin ⑨ inputs the interrupt signal output by microcomputer A before it sends data to microcomputer B. When interrupt is received, an interrupt permission signal is output from pin ⑬ to microcomputer A.
Pins ⑪ and ⑫ output REC OUT MUTING circuit control signals.
When high, REC MUTING turns ON.
MUTING is turned on so that $TAPE_1$ signal is not output to REC OUT_2 and $TAPE_2$ signal is not output to REC OUT_1.
Pin ⑭ outputs an interrupt signal before data is sent to microcomputer C.

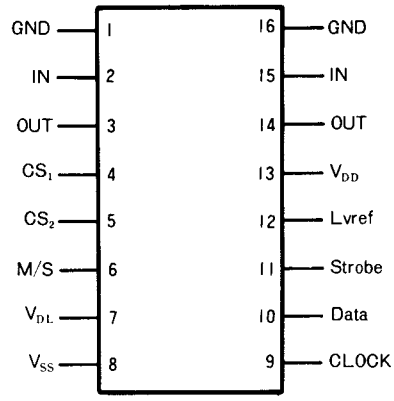
Pin ⑮ is the output pin for reset signal to microcomputer C.
Pin ⑯ is the output pin for the signal which turns power supply switch relay ON/OFF.
Pins ㉑ ~ ㉔ are microcomputer C data output pins, and microcomputer C outputs an end signal after receiving the data. Pins ⑩ receives this signal.
Pin ㉚ is the microcomputer A clock signal input pin.
Pin ㉛ is the microcomputer A serial data input pin.
Pin ㉝ is the output pin for serial data to microcomputer A.
Pins ㉞ ~ ㊲ are input pins for address (of each frequency) data from microcomputer D.
Pins ㊳ ~ ㊶ are input pins for the control signal sent from microcomputer D to the A/D converter.
Pin ㊳ is the A/D converter END signal input pin.
Pin ㊴ is the input pin for A/D converted data.
Pin ㊵ is the chip enable signal input pin.
Pin ㊶ is the A/D converter start signal input pin.
Pins ㊻ ~ ㊾ are output pins for data to the RAM.
Pins ㊿ ~ ㊼ are output pins for the address signals to the RAM.
Pins ㊽ and ㊾ are RAM R/W signal output pins.

IC_{103} CX-7978

CX-7978 is a 2dB step low distortion ratio electronic volume, with two circuits each of which can obtain 0 ~ 78dB, ∞ attenuation.

Pin Functions:

IN, OUT(②, ③, ⑭, ⑮) Audio signal I/O pins.
CS (④, ⑤) Chip select pins; the chip is selected when serial data bit 9 and bit 10 match CS_1, CS_2 pin levels.
"0" = Vss
"1" = OPEN or V_{DL}
M/S (⑥) Serial data input mode switching pin (11 bit input when OPEN or V_{DL}).
V_{DL} (⑦) Power supply (higher voltage than Vss).
Vss (⑧) Power supply (-14V).
CLOCK (⑨) Clock signal input; takes in data at clock signal rise.
DATA (⑩) Serial data input pin.
Strobe (⑪) Strobe signal input pin. The data taken into the IC is latched at the rise of this pulse, and the internal switch goes on according to the data.
Lvref (⑫) Sets control signal (clock, data, strobe) input level range.
V_{DD} (⑬) Power supply (+14V).



Control Data Structure

11	10	9	8	7	6 5 4 3	2 1
1	CS_2	CS_1	R	L	8dB step data	2dB step data

position	bit 8 7
no change	0 0
L	0 1
R	1 0
L + R	1 1

position	bit 6 5 4 3
0 dB	0 0 0 0
8 dB	0 0 0 1
16 dB	0 0 1 0
24 dB	0 0 1 1
32 dB	0 1 0 0
40 dB	0 1 0 1
48 dB	0 1 1 0
56 dB	0 1 1 1
64 dB	1 0 0 0
72 dB	1 0 0 1
∞	1 0 1 0

position	bit 2 1
0 dB	0 0
2 dB	0 1
4 dB	1 0
6 dB	1 1

The attenuation amount is the sum of 8dB step and 2dB step.

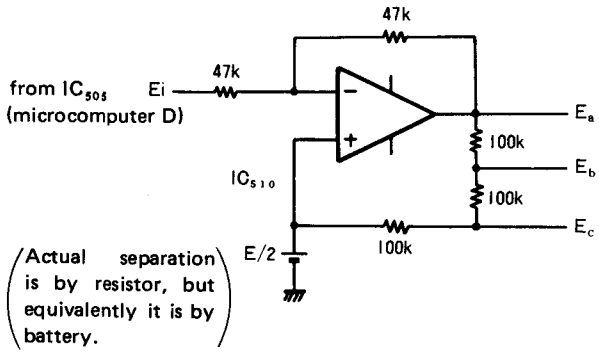
IC_{512} (TC4052BP)

The IC_{512} truth table is given below.

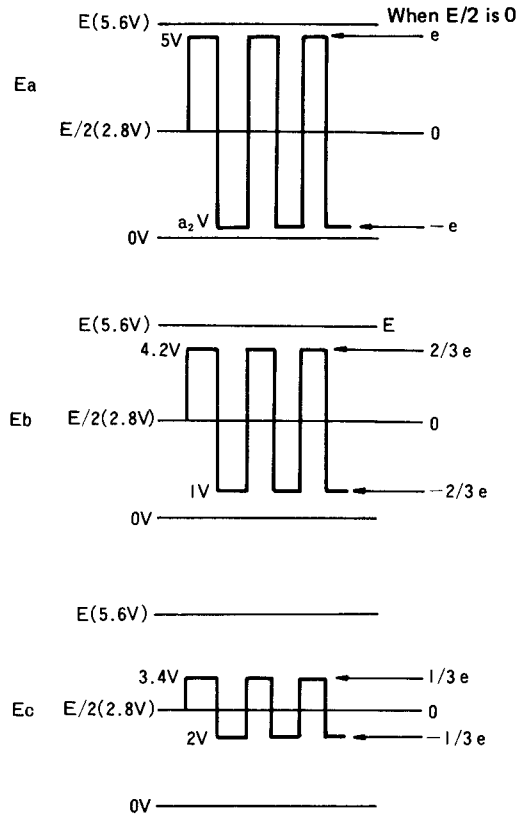
IN HIBIT	B	A	ON CHANNEL
L	L	L	0X, 0Y
L	L	H	1X, 1Y
L	H	L	2X, 2Y
L	H	H	3X, 3Y

On this model, it can only be used under the conditions shown inside the □ .
The voltage output from IC_{510} is divided and applied respectively to 0X, 3Y/3X, 0Y.

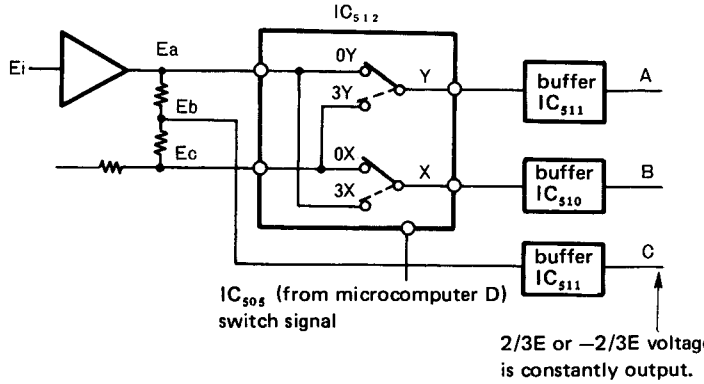
Making of divided voltage

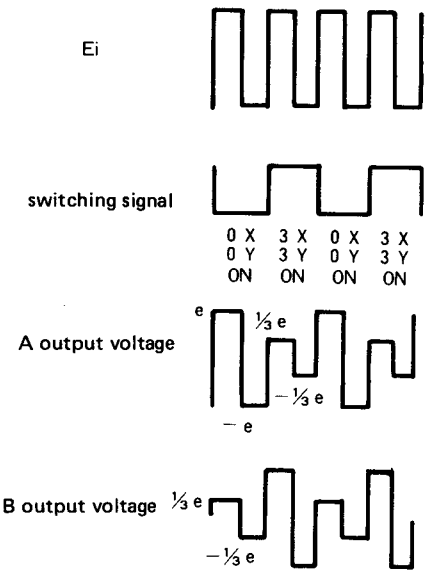


In the above figure, a high or low signal is applied to IC_{510} ⊖ pin from the microcomputer.
IC_{510} does switching operation, and output voltage is as follows.

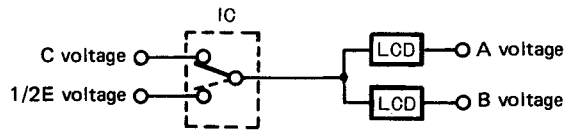


Ea, Eb and Ec voltages are determined as shown above. However, 1/3e, 2/3e, −1/3e and −2/3e are 1/3 and 2/3 of E and E/2 voltage difference, respectively, or are −1/3 and −2/3 of E/2 and −E voltage difference.
Ea, Eb and Ec output voltages are switched by IC_{512} switch.

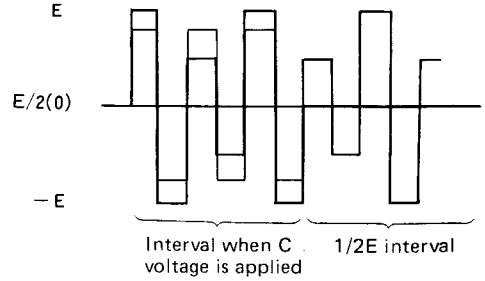




Voltage as shown above is output in the A, B outputs, A, B and C voltage and 1/2E voltage are applied to the LCD unit and IC's.
The LCD display circuit is as follows.



When the potential difference at the two LCD pins is more than 1.5V, it lights up.
The following is for A voltage only.



As can be seen from the diagram, the LCD does not light up while the C voltage is being applied.
When 1/2E voltage is applied, it lights up, but only when E and −E voltage are applied, and goes off when 1/3E voltage is applied.

IC_{751} (MICROCOMPUTER A)

This judges which key has been pressed for key input or remote control input, and transmits the data to IC_{501} microcomputer B).
Pin ⑪ is a data output pin, and data is sent serially.
Pin ⑮ is for the transmission clock signal, and IC_{501} (microcomputer B) reads in data at the rise of this clock signal.
When data is transmitted, a sign that data is to be sent to IC_{501} (microcomputer B) is required, and this is output by pin ⑯.

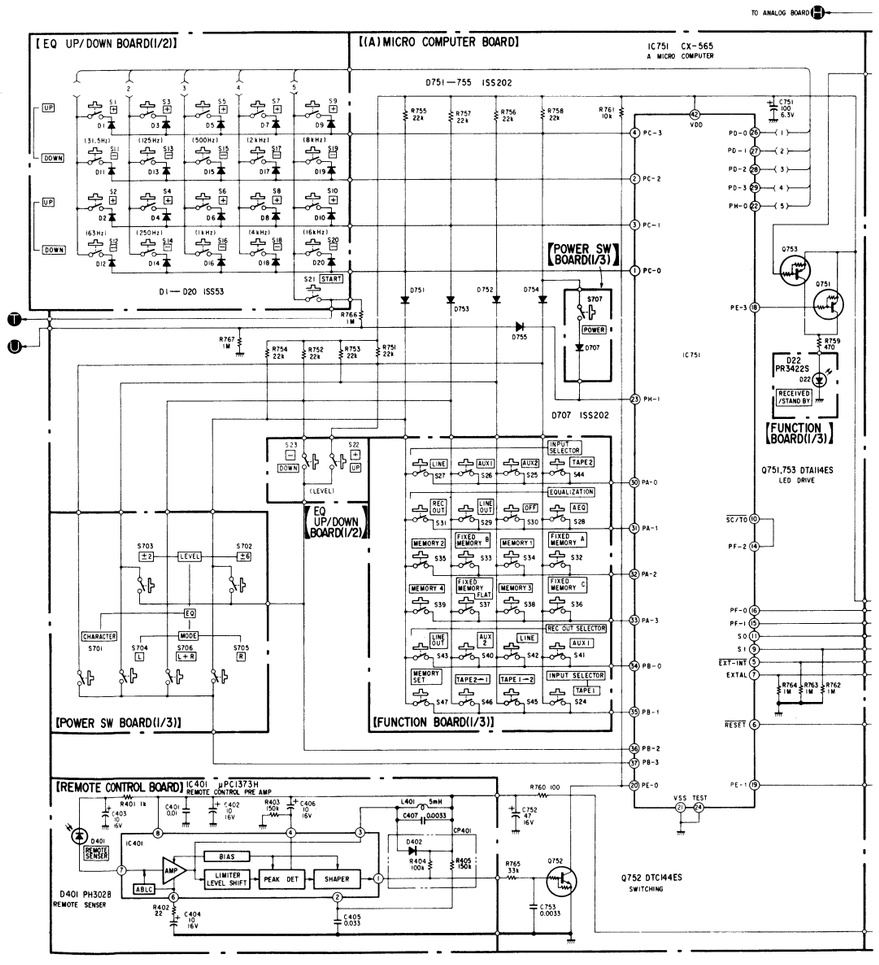
A signal which indicates that data may be sent is output from microcomputer B to pin ⑤. Data is transmitted after this signal is received.
Pins ㉒, ㉓, ㉖ ~ ㊲ output key scan signals.
Pins ① ~ ④ receive key inputs.
Pin ⑳ is for remote control input, and is low because Q_{527} is ON.
When the remote control signal is received at IC_{401}, Q_{752} goes off momentarily, so pin ⑳ goes high and stops the key scan signal. Then the remote control signal passes Q_{752} buffer and is received.

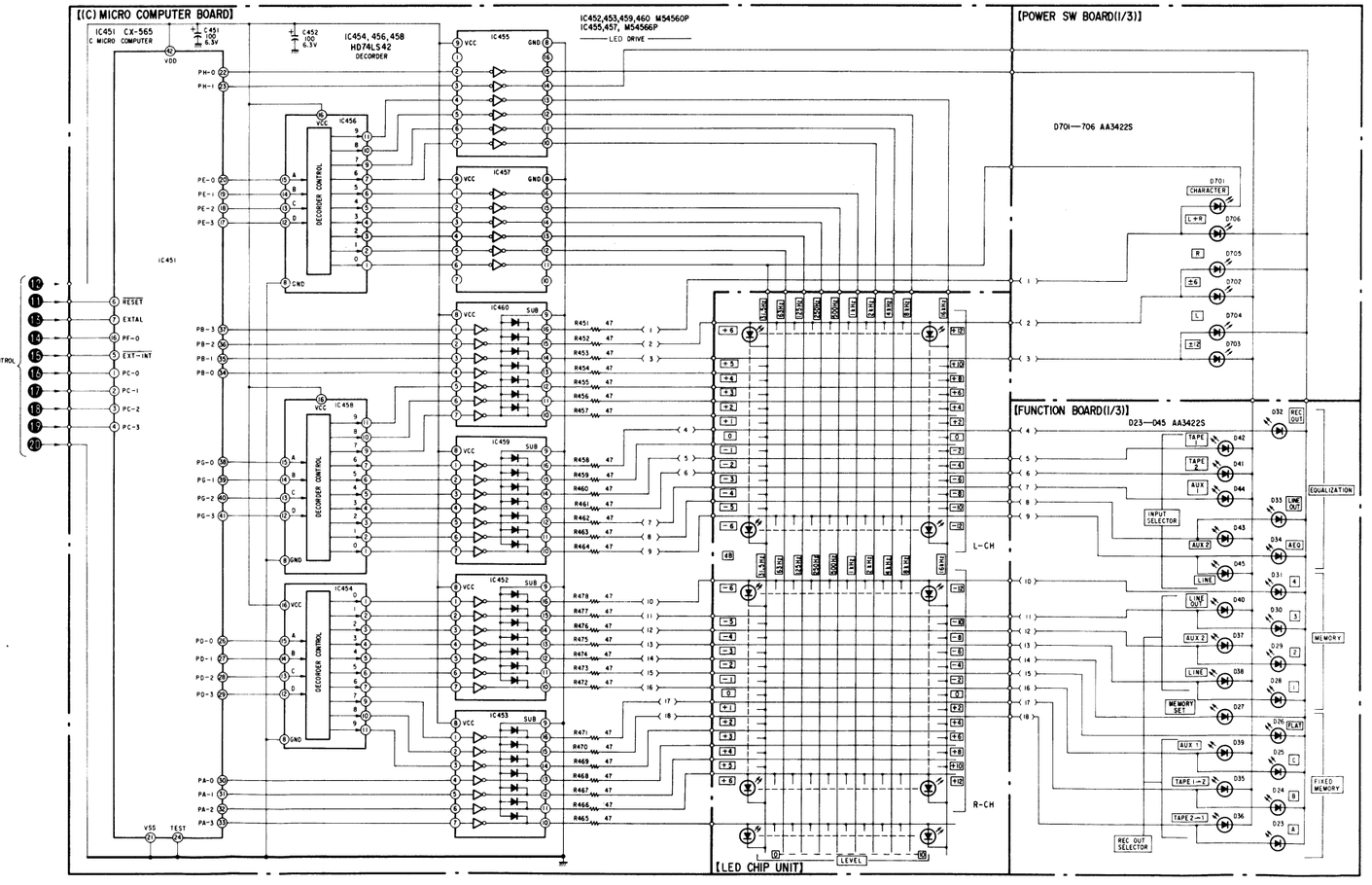
IC_{451} (MICROCOMPUTER C)

This microcomputer controls LED display. It receives data to be displayed from microcomputer B, and controls which LED is to be lit up according to that data.
Before data is sent out, microcomputer B sends an interrupt signal to microcomputer C.
Next the data is transmitted.
After data is completely received, microcomputer C informs microcomputer B of this by a signal.

Pins ① ~ ④ : Input pins for data from microcomputer B.
Pin ⑤ : Interupt signal input pin.
Pin ⑥ : Reset signal input pin.
Pin ⑯ : Outputs signal which informs that data has been received.
Pin ⑦ : Clock signal input pin.

Others pins (except power supply and ground) are data output pins.



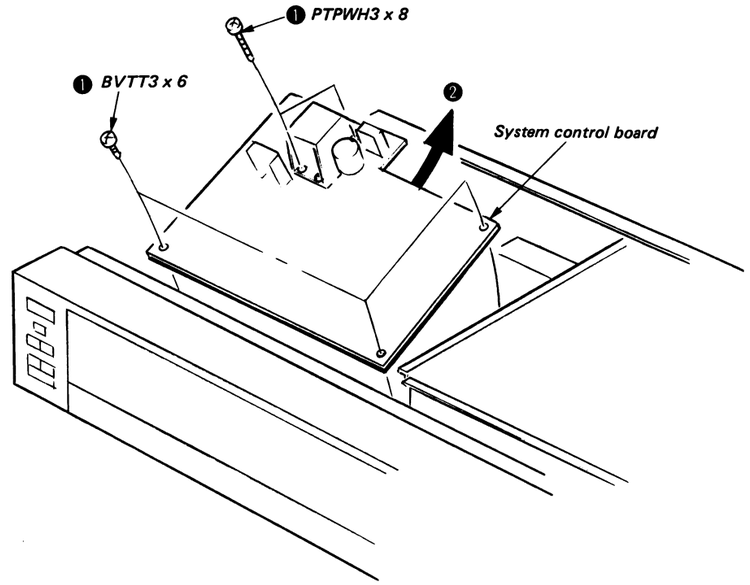


SECTION 3
DISASSEMBLY

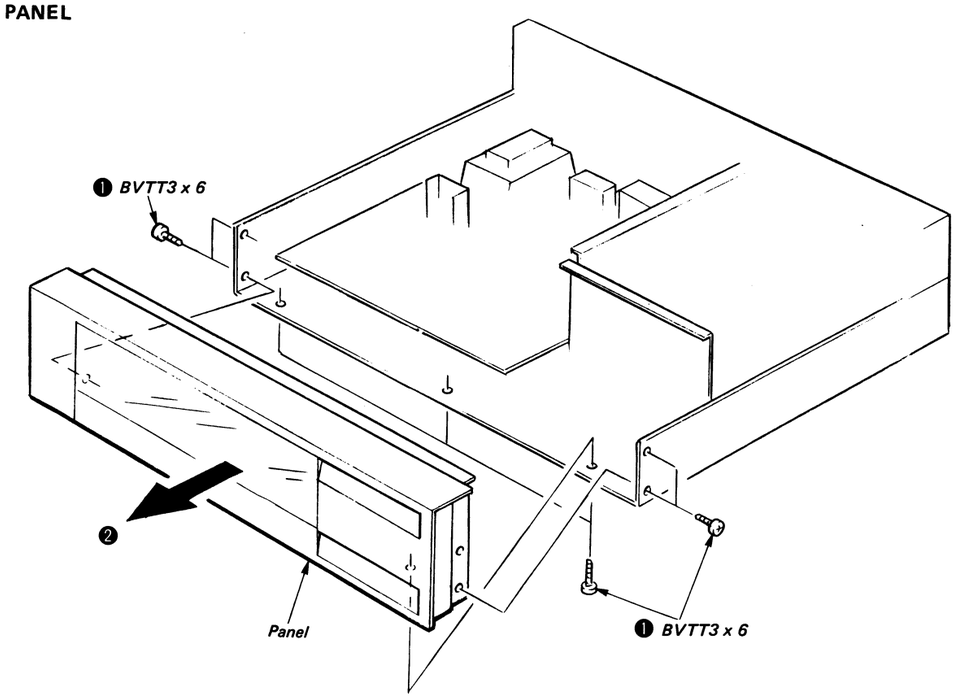
Note: Follow the disassembly procedure in the numerical order given.

REMOVE CASE.

SYSTEM CONTROL BOARD

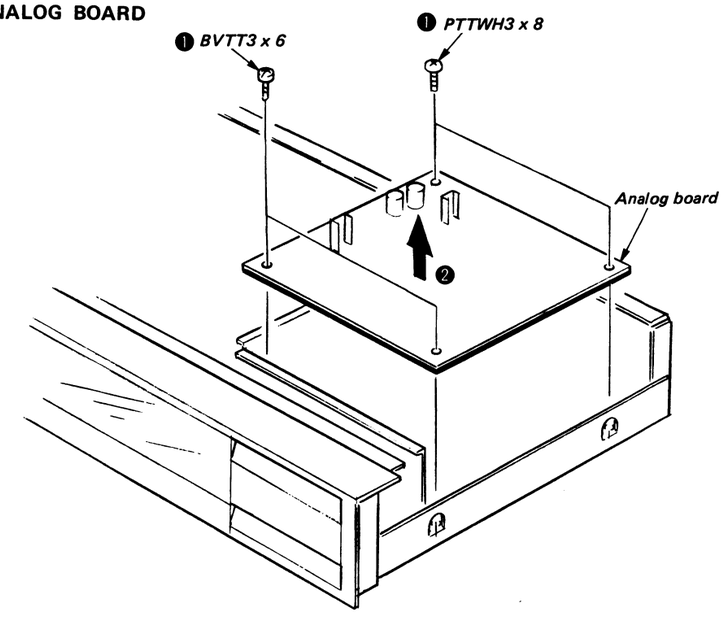


PANEL

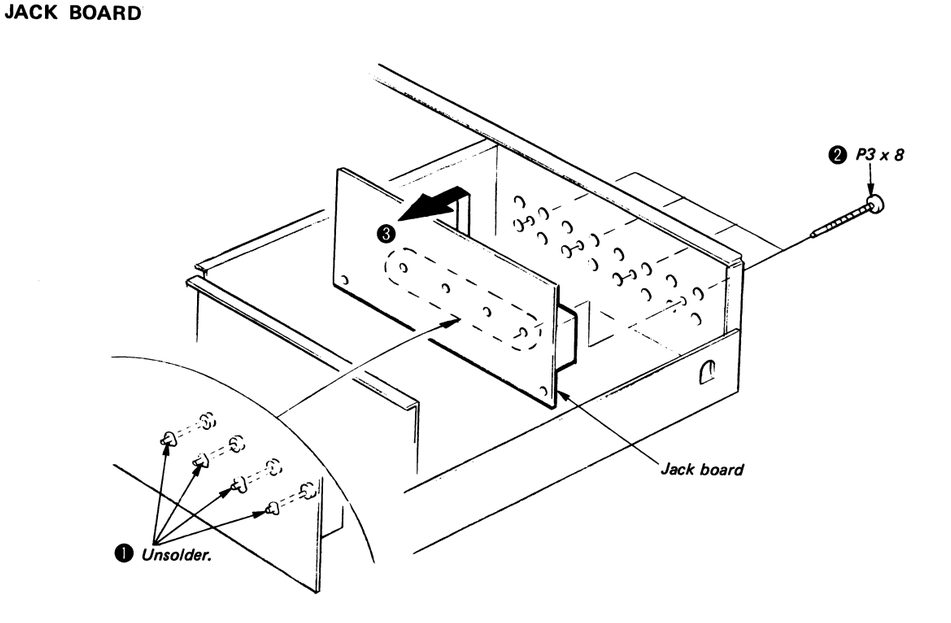


Remove Bottom Case
Screw six pieces

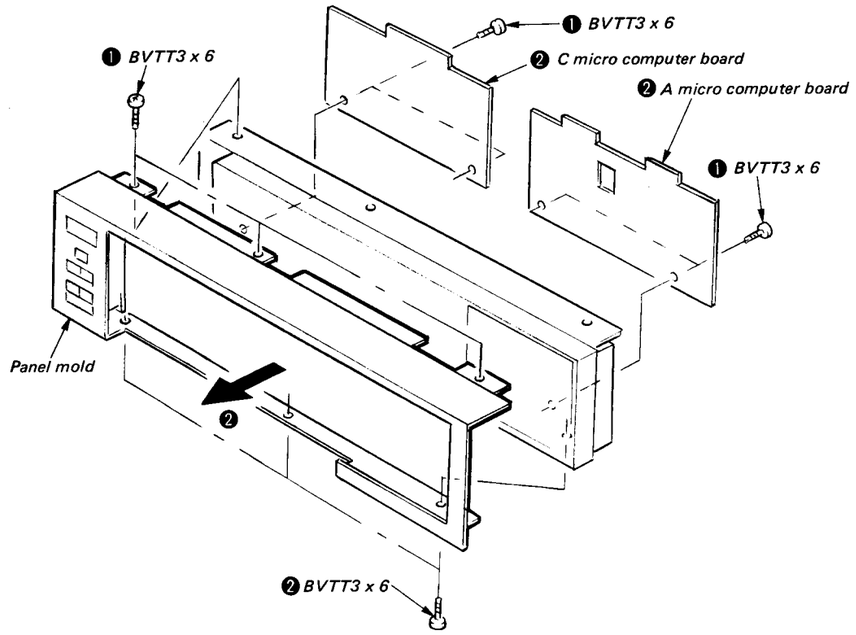
ANALOG BOARD



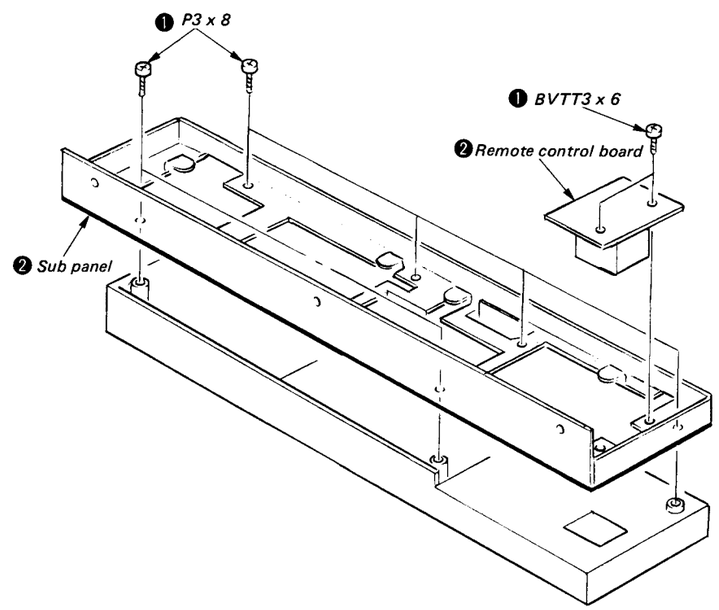
JACK BOARD



A MICRO COMPUTER BOARD, C MICRO COMPUTER BOARD, PANEL MOLD

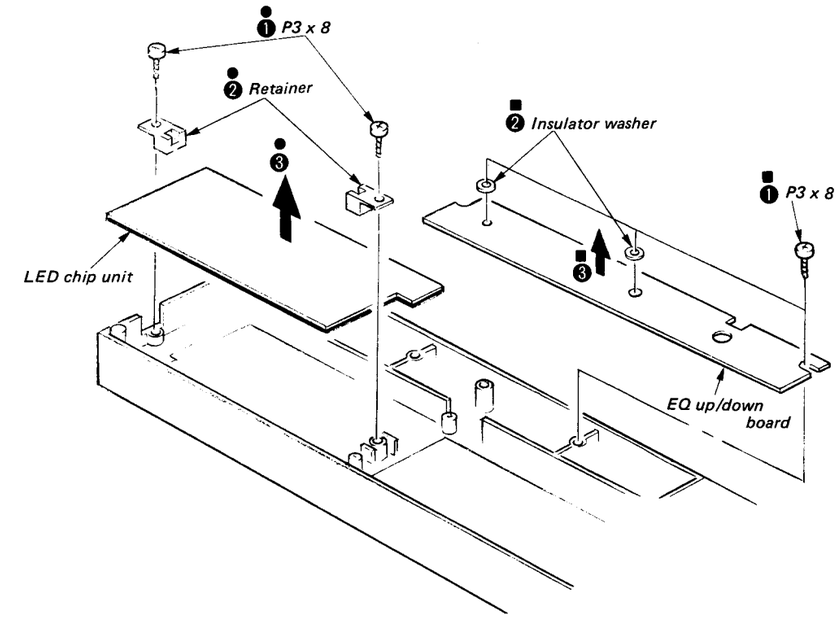


SUB PANEL, REMOTE CONTROL BOARD

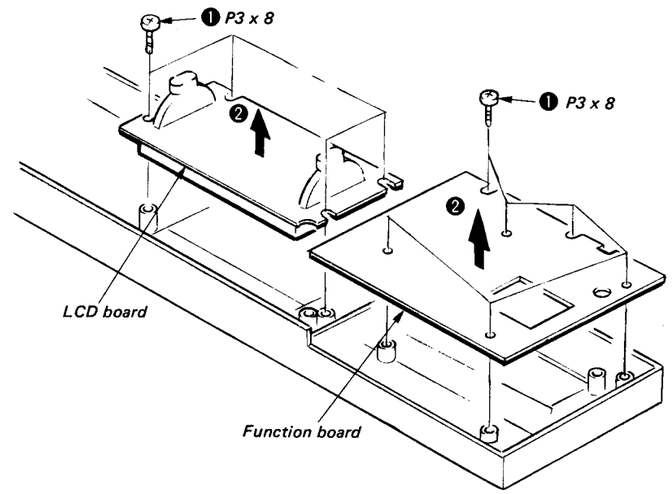


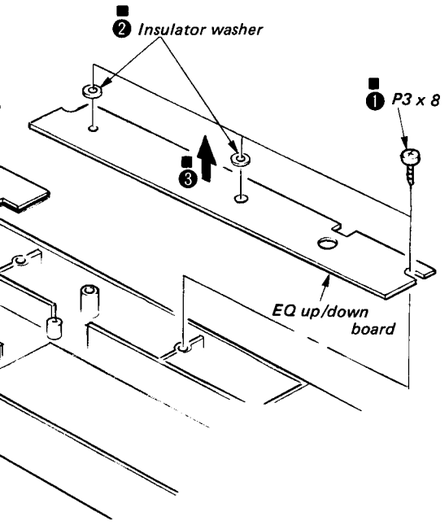
EQ UP/DOWN BOARD, LED CHIP UNIT

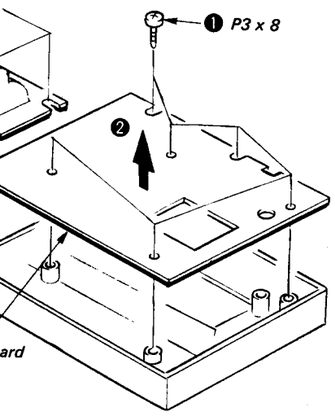
● ❶ ~ ❸ LED CHIP UNIT
■ ❶ ~ ❸ EQ UP/DOWN BOARD



FUNCTION BOARD, LCD BOARD





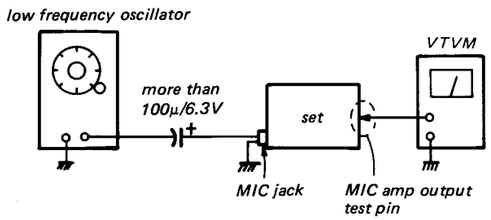


SECTION 4
ADJUSTMENTS

Frequency Response Adjustment:

Be sure to perform the following adjustment when replacing the microphone.
(This adjustment is performed to flatten the frequency response by correcting the 125Hz and 16kHz level difference relative to 4kHz.)

Connection Diagram:



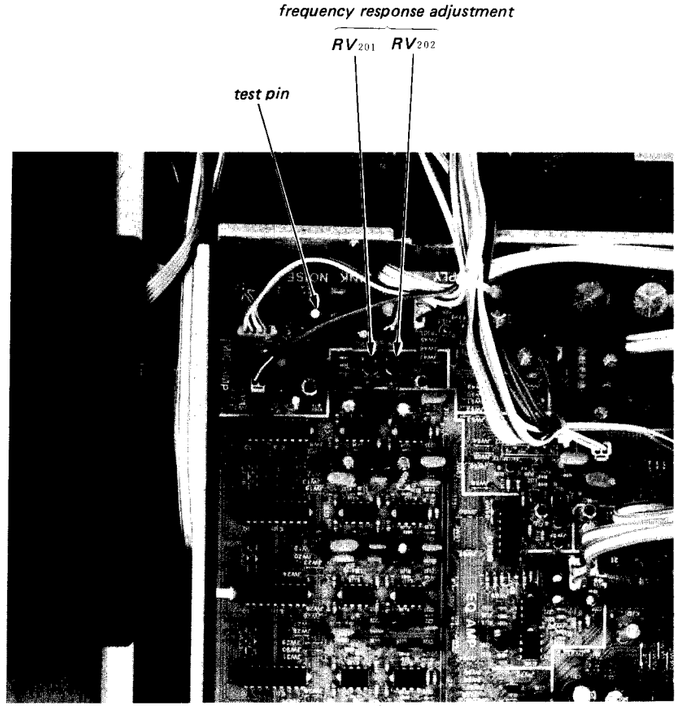
Procedure:

The set may be in any state.

1) Apply a 4Hz signal to the MIC jack from the oscillator, and adjust input level so that output is −10dBs.
2) Set frequency to 16kHz, and adjust RV201 to correct MIC data value only.
3) Set frequency to 4kHz and adjust input so that output is −10dBs.
4) Set frequency to 125Hz, and adjust RV202 to correct MIC data value only.
MIC data is as follows.

125Hz	4kHz	16kHz
−10	0	−5
↓	↓	↓
+10dB	0dB	+5dB

The level difference relative to 4kHz for each frequency is to be corrected.
In this example, 125Hz is corrected +10dB relative to 4kHz.
16kHz is corrected +5dB relative to 4kHz.
(When the adjustment is not exact with the adjustment resistors, get it as close as possible.)



CTION 4
USTMENTS

ent when

frequen-
d 16kHz

VTVM

o output

from the
output is

V201 to

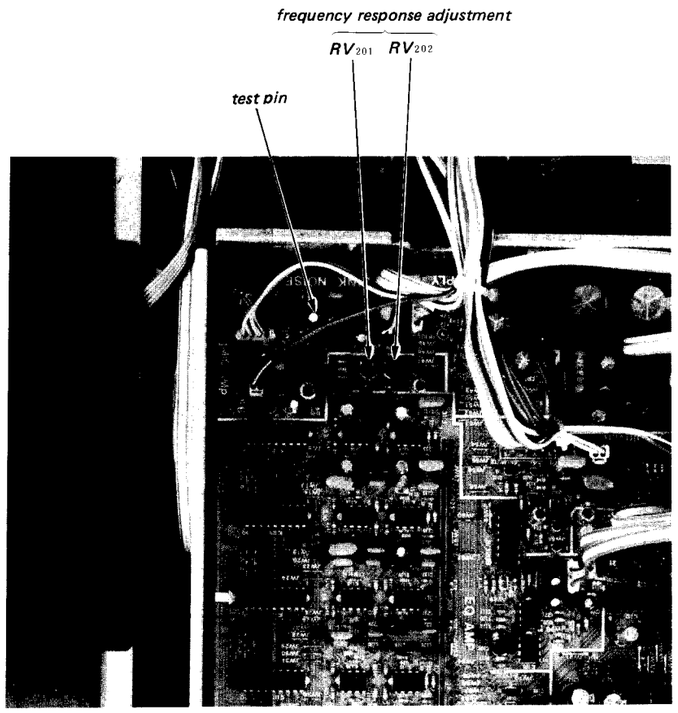
t so that

V202 to

for each

l +10dB

o 4kHz.
with the
possible.)



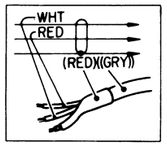
5-1. MOUNTING DIAGRAM

• Refer to page 38 for semiconductor lead layouts.

Q, IC	IC 1	IC2														IC460 IC459 IC458		
D		11 1	12,13 2,3	14,15 4,5	36 25 23 34 41	16,17 26 6,7 24 35 33 42	18,19 37 8,9 27 43	39 30 28 32 44	20 10	38 31 29 45	40 22	706 704 702 701	705 703 707	755				

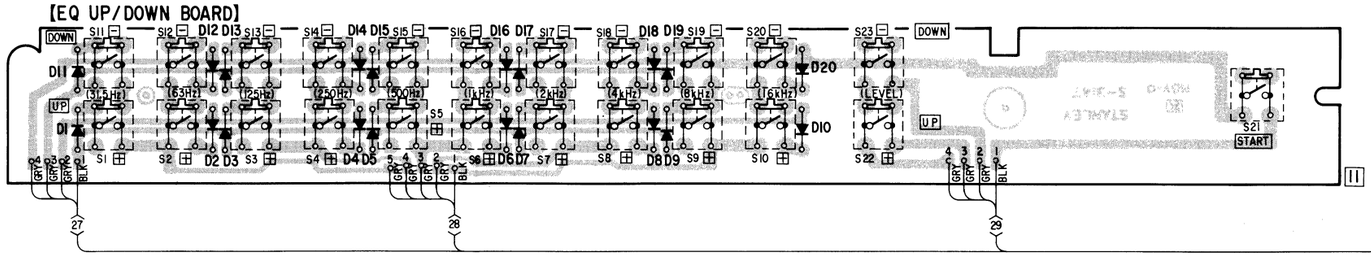
Note:

- Color code of sleeving over the end of the jacket.

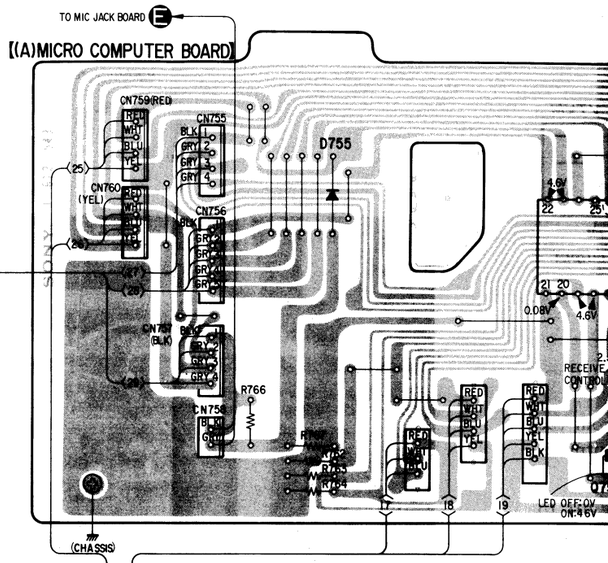


- ○—: parts extracted from the component side.
- ■ : part mounted on the conductor side.
- ▒ : B + pattern
- —→— : signal path
- —·→ : L-CH signal path
- —··→ : R-CH signal path

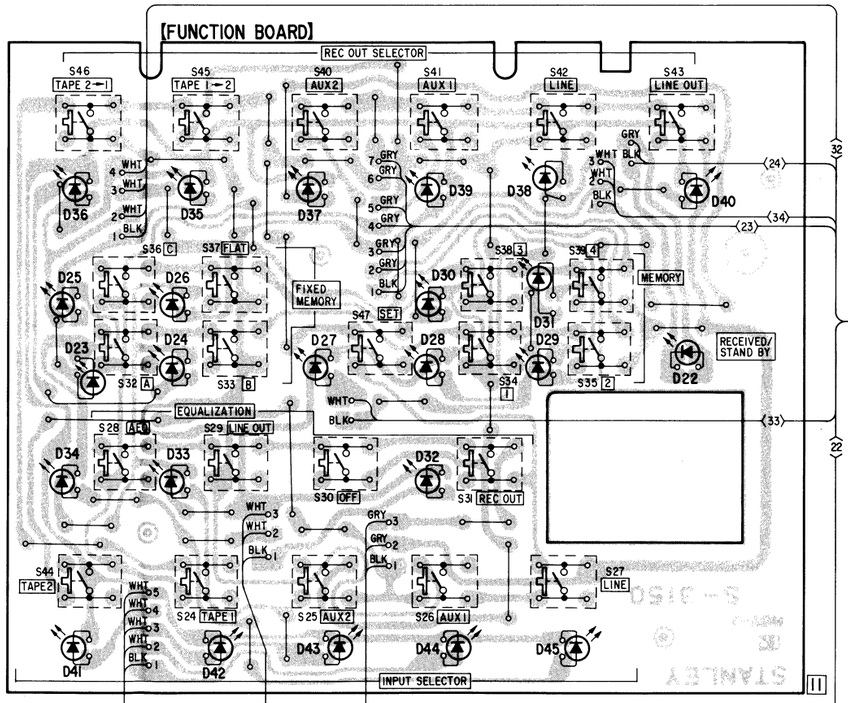
【EQ UP/DOWN BOARD】



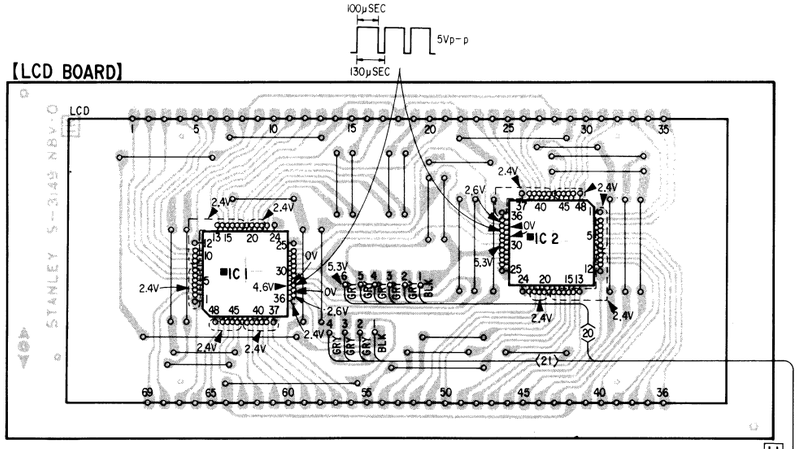
【(A)MICRO COMPUTER BOARD】

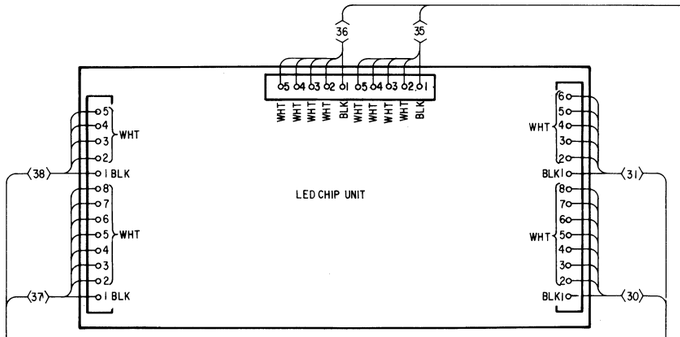


【FUNCTION BOARD】

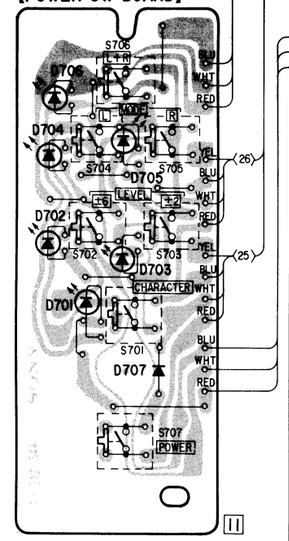


【LCD BOARD】

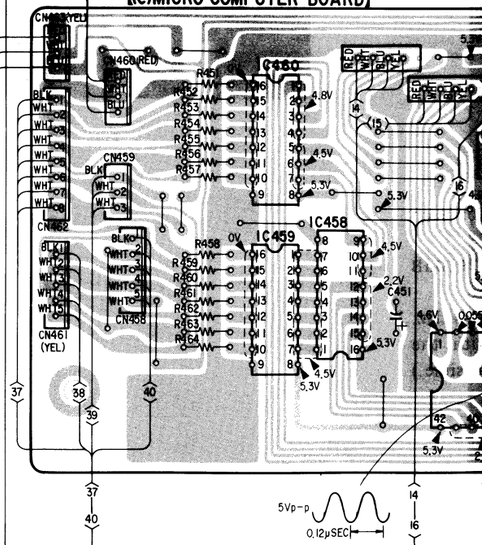




【POWER SW BOARD】



【(C)MICRO COMPUTER BOARD】



(35, 36)

(30, 31, 37, 38)

(22, 23, 24, 32—34)

20 21 39 40

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27

IC460 IC459 IC458 IC751 752 751 753 IC457 IC456 IC451 IC455 IC454 IC453 IC452 IC401 IC518 IC523 IC509 IC517 IC522 IC512 IC511 IC516 IC521 IC510 IC515 IC520 IC508 IC514 IC507 IC513 IC519 IC506 522 523 521 519,520 516 515 514 IC503 IC502 IC505 513

706 704 702 701 705 703 707 755 751 752 753 754 402 401 511 520 521 519 522 523 524 525 518 516 517 515 514 513 512 511 510 509 508 507 506 505 504 503 502 501 526 538 539 536 537 528 527 531 532 529 530 502,501

TO MIC JACK BOARD (E)

【(A)MICRO COMPUTER BOARD】

CN759(RED) CN755 CN760 (YEL) CN756 CN757 (BLK) CN758 D755 IC751 R766 R765 R760 R761 C753 C751 R758 R756 R757 R755 R751 R752 R753 R754 D751 D752 D753 D754 Q752 Q751 Q753 C752 CN753 CN754 (RED) CN752(BLK) 4.6V 5.3V 4.5V 2.7V 0.08V 2.5V RECEIVE REMOTE CONTROL SIGNAL:1.9V LED OFF:0V ON:4.6V LED OFF:4.8V ON:0.6V 7.8V 7.4V

(CHASSIS)

【REMOTO CONTROL BOARD】 CP401 D402 R404 R405 REMOTE SENSER D401 IC401 C401 C402 C403 C404 R401 R402 R403 R405 7.4V

【REMOCON FITTING BOARD】 7.4V (CHASSIS)

TO ANALOG BOARD (D) (B)

【BEEP SW BOARD】 S801 BEEP ON OFF

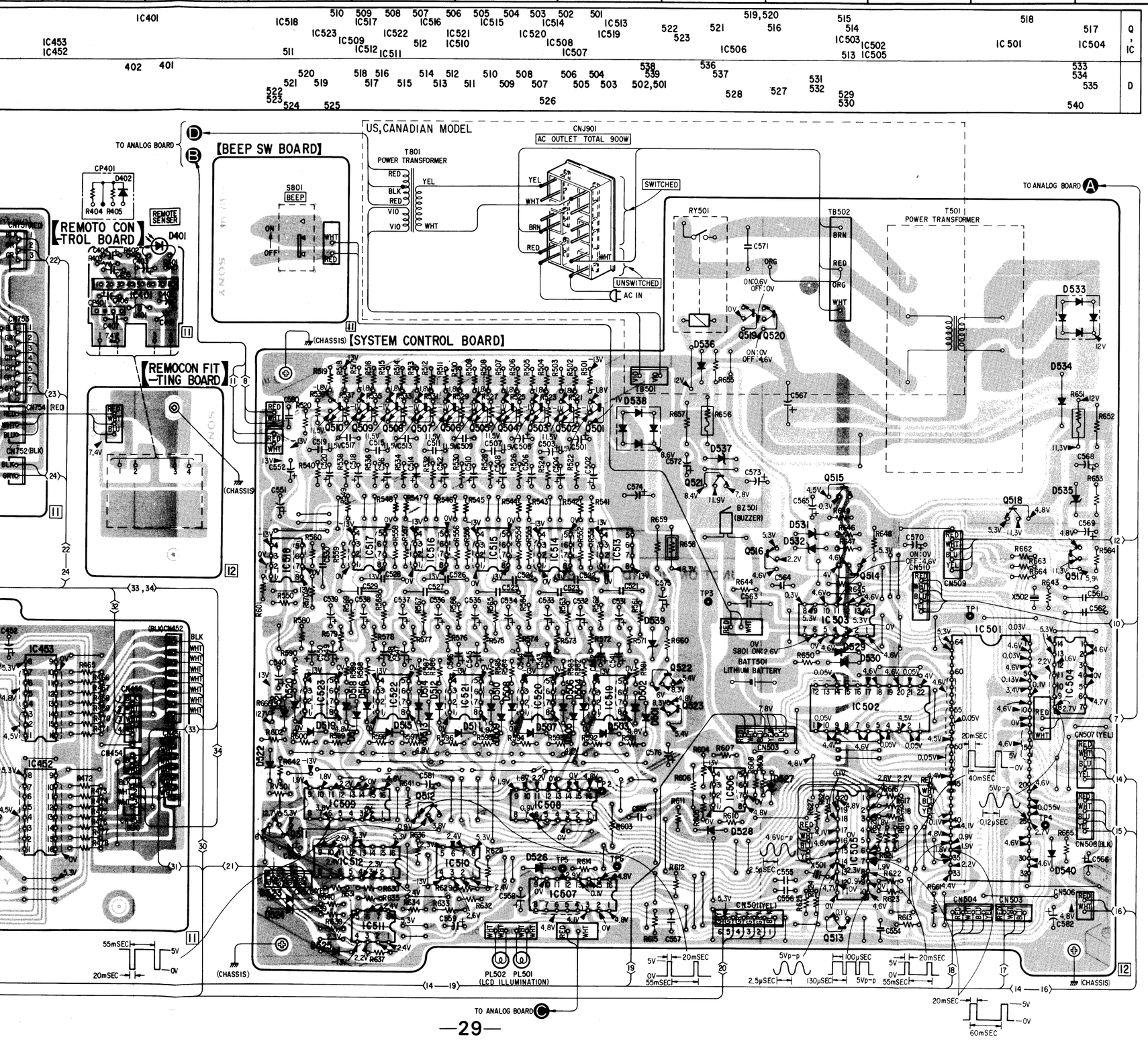
US,CANADIAN MODEL

T801 POWER TRANSFORMER RED BLK RED VIO VIO YEL WHT

CNJ901 AC OUTLET TOTAL 900W SWITCHED UNSWITCHED AC IN

(CHASSIS) 【SYSTEM CONTROL BOARD】

RY501 TB502 C571 ON:0.6V OFF:0V Q519 Q520 ON:0V OFF:4.6V D536 TB501 D538 R657 R656 C567 D537 C572 C573 Q521 C574 BZ501 (BUZZER) Q515 R659 R658 D531 D532 Q516 Q514 C564 C563 R644 R645 R646 R647 R648 R649 R650 TP3 SB01 ON:2.6V BATT501 LITHIUM BATTERY Q522 Q523 D539 R660 R671 R672 R673 R674 R675 R676 R677 R678 R679 R680 R681 R682 R683 R684 R685 R686 R687 R688 R689 R690 R691 R692 R693 R694 R695 R696 R697 R698 R699 R700 R701 R702 R703 R704 R705 R706 R707 R708 R709 R710


US, CANADIAN MODEL
AEP, E MODEL
【BEEP SW BOARD】
【REMOTO CONTROL BOARD】
【REMOCON FITTING BOARD】
【SYSTEM CONTROL BOARD】
TO ANALOG BOARD
CNJ901
AC OUTLET TOTAL 900W
T801
POWER TRANSFORMER
T501
POWER TRANSFORMER
S901
VOLTAGE SELECTOR
220V
120V
SWITCHED
UNSWITCHED
AC IN
S801
BEEP
CP401
D402
D401
REMOTE SENSER
RY501
TB502
TB501
D533
D534
D535
D536
D537
D538
D539
D540
Q519
Q520
Q521
Q522
Q523
Q513
Q514
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IC512
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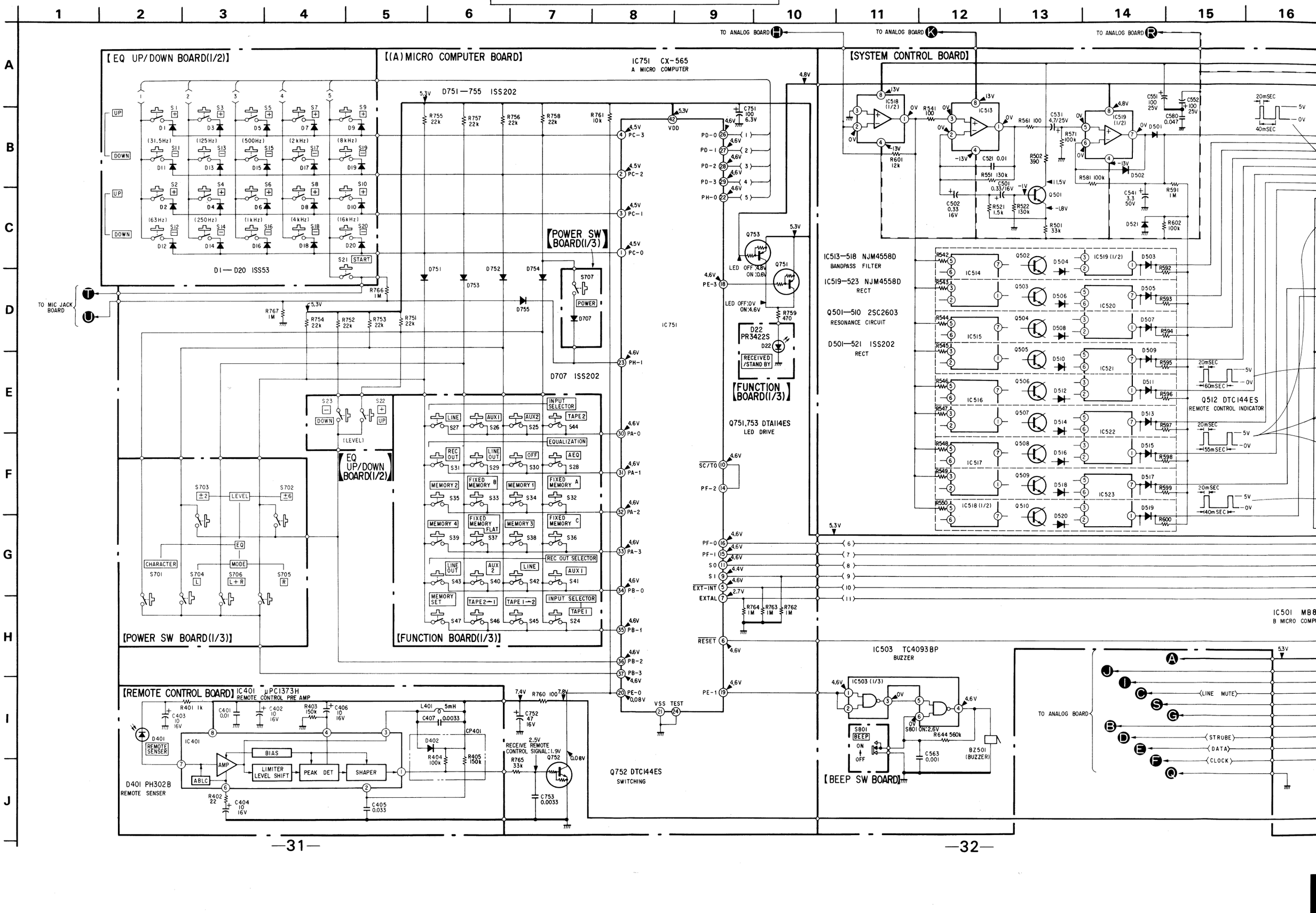
IC516
IC517
IC518
IC519
IC520
IC521
IC522
IC523
IC452
IC453
BZ501
(BUZZER)
BATT501
LITHIUM BATTERY
SB01 ON 2.6V
OFF 0V
PL502
PL501
(LCD ILLUMINATION)
CN501(YEL)
CN502
CN503
CN504
CN505
CN506(BLK)
CN507(YEL)
CN509
CN510
CN752(BLK)
CN753
CN754(RED)
CN454
(BLK)CN452
(CHASSIS)
ON:0.6V OFF:0V
ON:0V OFF:0.6V
ON:0V OFF:4.6V
ON:0V OFF:4.6V
55mSEC 5V 0V 20mSEC
20mSEC 5V 0V 55mSEC
5Vp-p 2.5μSEC 100μSEC 130μSEC
20mSEC 5V 0V 60mSEC
40mSEC
0.12μSEC
2.5μSEC

5-2. SCHEMATIC DIAGRAM • Refer to page 36 for note.



12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

TO ANALOG BOARD (R)

IC513 R561 100 C531 4.7/25V R571 100k R581 100k D502 D501 C551 100 25V C552 100 25V C580 0.047 C521 0.01 R551 130k C501 0.33/16V R521 1.5k R522 130k R502 390 Q501 R591 1M C541 3.3 50V D521 R602 100k R501 33k

IC514 IC515 IC516 IC517 IC518(1/2) IC519(1/2) IC520 IC521 IC522 IC523

Q502 Q503 Q504 Q505 Q506 Q507 Q508 Q509 Q510 D504 D506 D508 D510 D512 D514 D516 D518 D520 D503 D505 D507 D509 D511 D513 D515 D517 D519 R592 R593 R594 R595 R596 R597 R598 R599 R600

20mSEC 5V 0V 60mSEC — Q512 DTC144ES REMOTE CONTROL INDICATOR

20mSEC 5V 0V 55mSEC

20mSEC 5V 0V 40mSEC

IC508,509 TC4051BP MULTI PLEXER

IC508 IC509 IN OUT CONTROL

20mSEC 5V 0V 40mSEC

5.5mSEC 5V 0V 20mSEC

Q512 DTC144ES SWITCHING (INVERTER)

TP2

C581 3.3 50V

IC506 NJM4558D LOGARITHM AMP

D527 HZ3ALL

R603 330k R604 330k R605 560k R606 15k R607 12k R608 62k R609 2.7k R610 2.2k R611 10k R612 8.2k R613 22k R614 2k C553 100p C554 0.01 C555 100p C556 100p C557 0.0047 C558 4.7 25V C559 100 16V C560 220 10V C561 22p C562 22p C564 0.01 C565 10 16V C566 100 6.3V C568 47 16V C569 47 16V C570 220 6.3V C573 100 16V C574 3300 16V C575 47 16V C576 220 6.3V C582 2.2 50V

Q513 2SC2603 LCD MUTE

Q513 R611 10k D528

D528 ISS202

IC507 LC7910 A/D CONVERTER

TP5 D526 RD3.0EL

IC505 M50760 D MICRO COMPUTER

D522 RD6.2EL

Q511 2SC2063 VOL. REG.

R666 470 Q511 R642 6.2k RV501 1k D522 R616 2.2k R630 2k R617 2.2k R628 47k R631 2k R629 47k IC510(1/2) R632 100k R633 100k R634 100k

TP6

IC510,511 NJM4558D LCD DRIVE

IC512 TC MULTI PL

R622 22k R623 22k R624 22k R625 22k

X501 400kHz

5Vp-p 2.5μSEC 4.6Vp-p

5Vp-p 100μSEC 130μSEC

INPUT/OUTPUT PORT D D3 D4 D8 D7 D6 D5 INPUT/OUTPUT PORT F F3 F2 F1 F0

SENS INPUT S D0 D1 D2 RESET VSS CN VSS

D540 ISS202 D540 R665 4.7k C582 2.2 50V

20mSEC 5V 0V 55mSEC

20mSEC 5V 0V 60mSEC

20mSEC 5V 0V 40mSEC

R618 22k R619 22k R620 22k R621 22k

5.3V

(14) (15) (16) (17) (18) (19) → 11 12 13 14 15 16 17 18 19 20

TO

N O P

R627 22k R626 22k

IC504(1/2) R643 1M X502 4.19MHz C562 22p C561 22p

5Vp-p 0.12μSEC

Q522 2SC2603 Q523 2SD880 — VOL. REG. —

D538 S2VB20 RECT

D539 RD6.2EL

IC504 TC40H000P MICRO COMPUTER CLOCK

IC503(1/3)

Q515 DTC114ES POWER OFF DET

IC503 TC4093BP SWITCHING (RESET)

R659 1.8k (1/4W) R660 1k D539 C575 47 16V C574 3300 16V

D534

D534,536 ISS202

Q516 DTA114ES RESET

D529,530 ISS202 D541 ISS202

R645 10k D529 D530 R650 4.7k BATT 501 LITHIUM BATTERY (CR-2025) C564 0.01 Q516 R646 20k R647 1k D532 D531 4V Q514 R648 4.7k D541

R655 5.6k ON:0.6V OFF:0V Q520

R652 1.8k (1/4W) R653 470 R654 1k D535 C568 47 16V D536 RY501 Q519

D531,532 RD3.6EB Q514 2SA1048 SWITCHING (RESET) Q519 2SD669 Q520 DTC114ES — RELAY DRIVE —

Q517 2SC2603 Q518 2SD880 — VOL. REG. —

D535 RD6.2EL

R657 1.8k (1/4W) C572 47 16V C573 100 16V Q521

Q521 2SC2603 VOL. REG.

D537 RD9.1EL

IC501 MB88421 B MICRO COMPUTER

IC501 E3 E2 E1 E0 R8 SC/TO S1 S0 R12 EX RESET R11 R10 R7 R6 R5 R4 R2 R1 R0 E4 E5 E6 E7 R14 R9 R13 O0 O1 O2 O3 IRQ R15 R3 E12 E13 E14 E15 E16 E17 E18 E19 E20 E21 E22 E23 P0 P1 VSS1 VSS2 VDD VM

TP4 TP1 C566 100 6.3V R661 1k

IC502 TC5501P OUTSIDE RAM

IC502 A0 A1 A2 A3 A4 A5 A6 A7 OD R/W VDD GND D OUT 4 D OUT 3 D OUT 2 D OUT 1 D IN 4 D IN 3 D IN 2 D IN 1 CE2 CE1

TO ANALOG BOARD

A J I C S G B D E F Q

LINE MUTE STROBE DATA CLOCK

R664 4.7k R663 4.7k R662 4.7k

BZ501 (BUZZER)

IC505 M50760
D MICRO COMPUTER

IC507 LC7910
A/D CONVERTER

IC506 NJM4558D
LOGARITHM AMP

IC504 TC40H000P
MICRO COMPUTER CLOCK

IC502 TC5501P
OUTSIDE RAM

IC503 TC4093BP
SWITCHING (RESET)

IC510,511 NJM4558D
— LCD DRIVE —

IC512 TC4052BP
MULTI PLEXER

D522 RD6.2EL

D523—525 ISS202

D526 RD3.0EL

D527 HZ3ALL

D528 ISS202

D529,530 ISS202

D531,532 RD3.6EB

D533 S2VB20
RECT

D534,536 ISS202

D535 RD6.2EL

D537 RD9.1EL

D538 S2VB20
RECT

D539 RD6.2EL

D540 ISS202

D541 ISS202

Q511 2SC2063
VOL. REG.

Q513

Q514 2SA1048
SWITCHING (RESET)

Q515 DTC114ES
POWER OFF DET

Q516 DTA114ES
RESET

Q517 2SC2603
Q518 2SD880
— VOL. REG. —

Q519 2SD669 Q520 DTC114ES
— RELAY DRIVE —

Q521 2SC2603
VOL. REGULATOR

Q522 2SC2603
Q523 2SD880
— VOL. REG. —

TO LCD BOARD

TO (C) MICRO COMPUTER BOARD

TO ANALOG BOARD

AEP, E MODEL

US, CANADIAN MODEL

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

IC505 M50760
D MICRO COMPUTER

IC507 LC7910
A/D CONVERTER

IC506 NJM4558D
LOGARITHM AMP

D527 HZ3ALL

D526 RD3.0EL

D522
RD6.2EL

Q511 2SC2063
VOL.REG.

IC510,511 NJM4558D
LCD DRIVE

IC512 TC4052BP
MULTI PLEXER

D523—525
ISS202

TO LCD BOARD

TO IC1 MICRO COMPUTER BOARD

TO ANALOG BOARD

D528 ISS202

D540 ISS202

Q513 2SC2603
MUTE

Q522 2SC2603
Q523 2SD880
VOL.REG.

D538 S2VB20
RECT

D539 RD6.2EL

IC504 TC40H000P
MICRO COMPUTER CLOCK

IC503 TC4093BP
SWITCHING(RESET)

Q515 DTC114ES
POWER OFF DET

Q516 DTA114ES
RESET

D529,530 ISS202
D541 ISS202

D534,536 ISS202

D531,532 RD3.6EB

Q514 2SA1048
SWITCHING(RESET)

Q519 2SD669 Q520 DTC114ES
RELAY DRIVE

Q517 2SC2603
Q518 2SD880
VOL.REG.

D535 RD6.2EL

Q521 2SC2603
VOL.REG.

D533 S2VB20
RECT

D537 RD9.1EL

IC502
TC5501P
OUTSIDE RAM

BATT 501
LITHIUM BATTERY
(CR-2025)

S901
VOLTAGE SELECTOR
200V 120V

T801
POWER TRANSFORMER

RY501

CNJ901
AC OUTLET TOTAL 900W

SWITCHED

UNSWITCHED

AC IN

AEP,E MODEL

US,CANADIAN MODEL

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- Components for right channel have same values as for left channel. Reference numbers are coded from
- : nonflammable resistor.
- : fusible resistor.
- : B+ bus.
- : B− bus.
- : panel designation.
- : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal (detuned) conditions with a VOM (50 kΩ/V).
- Voltage variations may be noted due to normal production tolerances.
- : signal path.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note: Voltages are measured with a VOM (50kΩ/V).

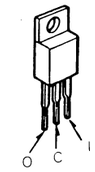
- Switch

Ref. No.	Switch	Position
S1	31.5Hz+	OFF
S2	63Hz+	OFF
S3	125Hz+	OFF
S4	250Hz+	OFF
S5	500Hz+	OFF
S6	1kHz+	OFF
S7	2kHz+	OFF
S8	4kHz+	OFF
S9	8kHz+	OFF
S10	16kHz+	OFF
S11	31.5Hz−	OFF
S12	63Hz−	OFF
S13	125Hz−	OFF
S14	250Hz−	OFF
S15	500Hz−	OFF
S16	1kHz−	OFF
S17	2kHz−	OFF
S18	4kHz−	OFF
S19	8kHz−	OFF
S20	16kHz−	OFF
S21	START	OFF
S22	LEVEL +	OFF
S23	LEVEL −	OFF
S24	TAPE 1 INPUT	OFF
S25	AUX 2 INPUT	OFF
S26	AUX 1 INPUT	OFF
S27	LINE INPUT	OFF
S28	AEQ EQ	OFF
S29	LINE OUT EQ	OFF
S30	OFF EQ	OFF
S31	REC OUT EQ	OFF
S32	FIXED MEMORY A	OFF
S33	FIXED MEMORY B	OFF
S34	MEMORY 1	OFF
S35	MEMORY 2	OFF
S36	FIXED MEMORY C	OFF
S37	FIXED MEMORY FLAT	OFF
S38	MEMORY 3	OFF
S39	MEMORY 4	OFF
S40	AUX 2 REC OUT	OFF
S41	AUX 1 REC OUT	OFF
S42	LINE REC OUT	OFF
S43	LINEOUT REC OUT	OFF
S44	TAPE 2 INPUT	OFF
S45	TAPE 1 − 2 REC OUT	OFF
S46	TAPE 2 − 1 REC OUT	OFF
S47	MEMORY SET	OFF
S701	CHARACTER	OFF
S702	±6	OFF
S703	±2	OFF
S704	L	OFF
S705	R	OFF
S706	L + R	OFF
S707	POWER	OFF
S801	BEEP	OFF

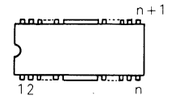
SEQ-555ES SEQ-555ES

- **Semiconductor Lead Layouts**

CX765

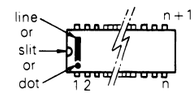


CX770A



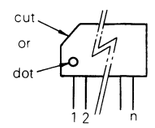
(Top view)

CX565-040
CX565-050
CX7976
CX7977
CX7978
LC7910
M50760-410P
M54560P
M54566P
MB88421-144M
NJM4560D
SN74LS42N
TC4051BP
TC4052BP
TC4093BP
TC5501P
TC40H000P
μPC4557C
μPC4558C

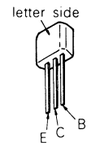


(Top view)

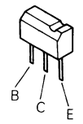
μPC1373H



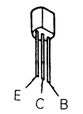
2SA1175



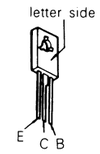
2SC2673



2SC2878

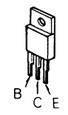


2SB649A
2SD669A



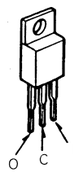
2SD774

2SD880

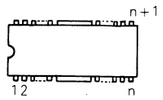


- **Semiconductor Lead Layouts**

CX765

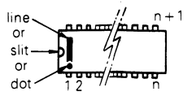


CX770A



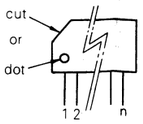
(Top view)

CX565-040
CX565-050
CX7976
CX7977
CX7978
LC7910
M50760-410P
M54560P
M54566P
MB88421-144M
NJM4560D
SN74LS42N
TC4051BP
TC4052BP
TC4093BP
TC5501P
TC40H000P
μPC4557C
μPC4558C

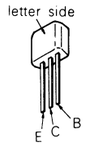


(Top view)

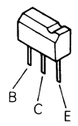
μPC1373H



2SA1175

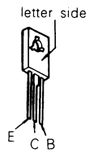


2SC2673



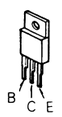
2SC2878

2SB649A
2SD669A

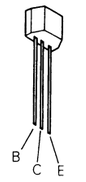


2SD774

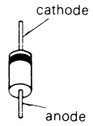
2SD880



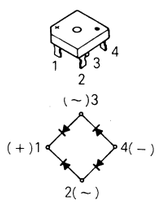
2SC2458
DTA114ES
DTC114ES
DTC124ES
DTC144ES



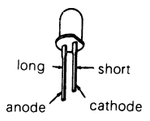
1SS202-1
HZ12A1
RD3.0E-B1
RD3.6E-L1
RD6.2E-L2
RD9.1E-L3
RD15E-L3



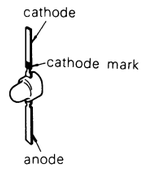
S2VB20



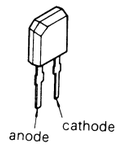
AA3422S



SR106C



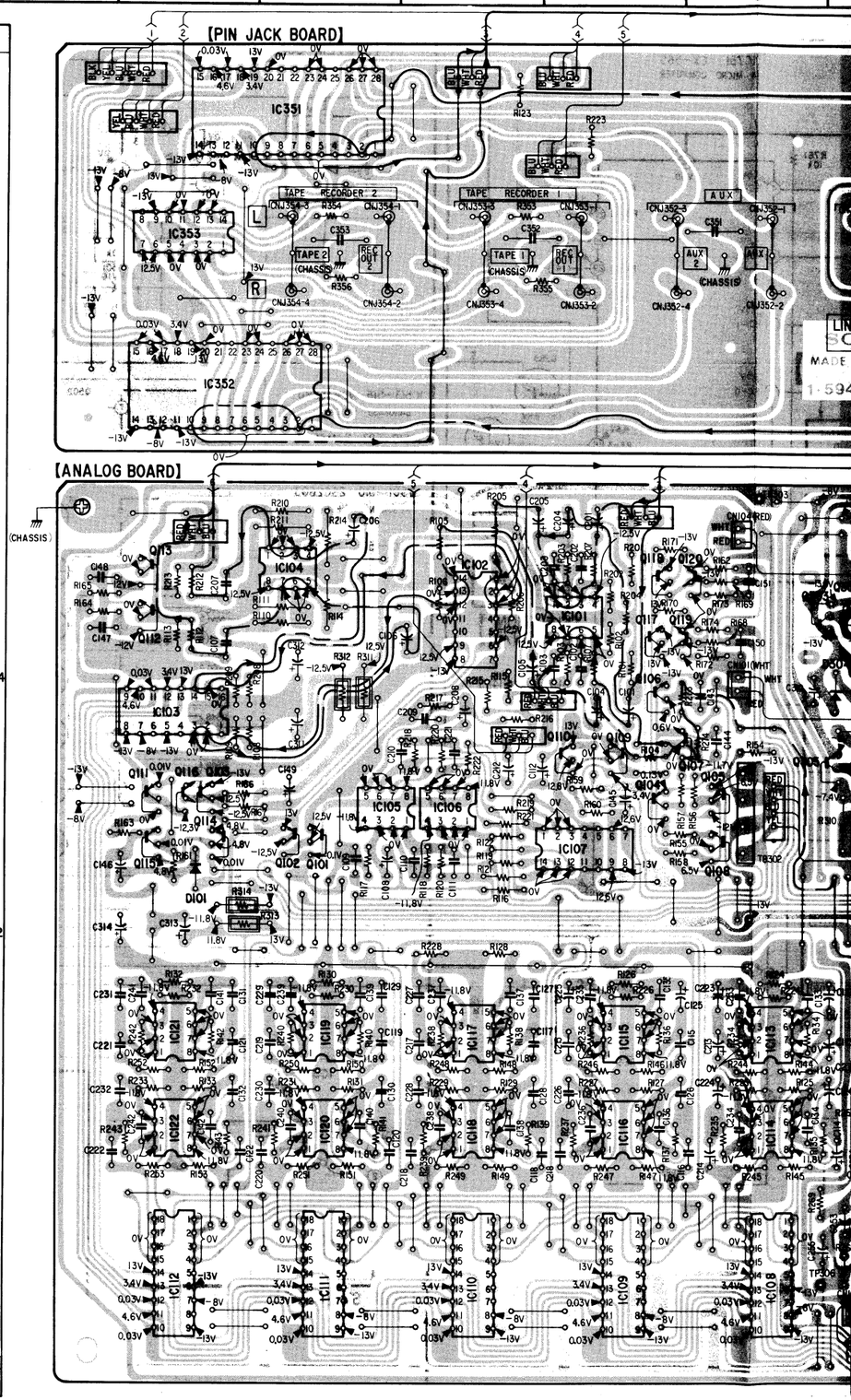
PH302B



5-3. MOUNTING DIAGRAM

- **Refer to page 38 for semiconductor lead layouts.**

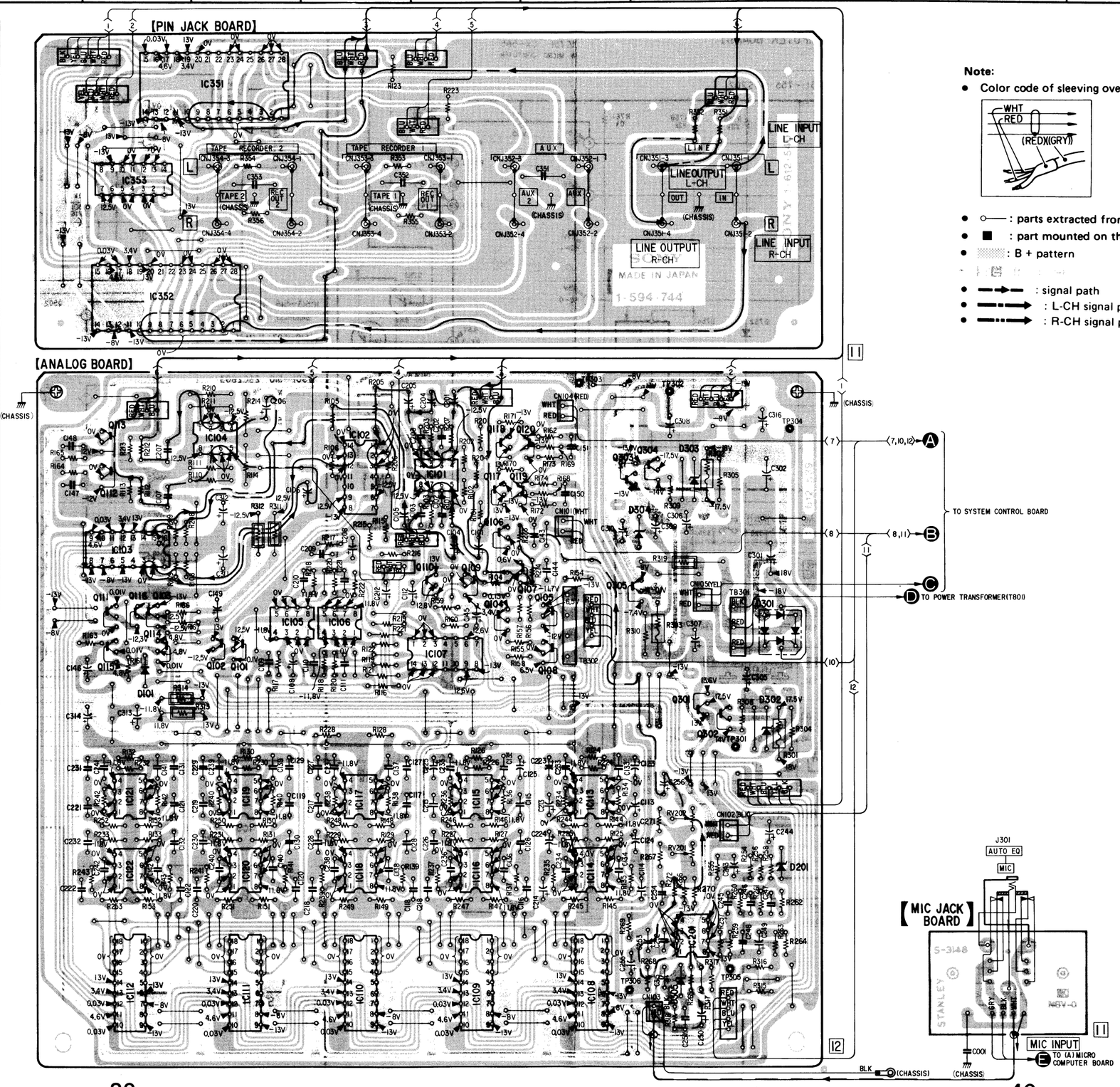
Q , IC	D
IC351	
IC353	
IC352	
113, IC104, 118, 120, 303, 304	
112, IC102, IC101, 117, 119	303
106	304
IC103, 107, 110, 109	305
111, 116, 103, 104, 105, IC105, IC106	301
115, 114, 102, 101, IC107, 108	101
301, 302	302
IC121, IC119, IC117, IC115, IC113	
IC122, IC120, IC118, IC116, IC114	201
IC201	
IC108—112	305
Q , IC	D



5-3. MOUNTING DIAGRAM

• Refer to page 38 for semiconductor lead layouts.

Q , IC	D
IC351	
IC353	
IC352	
I13, IC104, I18, I20 303, 304	
I12, IC102, IC101, I17 I19	303
I06	304
IC103	
I07	
I10, I09	305
I11, I16, I03, I04	
I05, IC105, IC106	301
I15, I14, I02, I01	
IC107, I08	101
301, 302	302
IC121, IC119, IC117 IC115, IC113	
IC122, IC120, IC118 IC116, IC114	201
IC201	
IC108—112	305
Q , IC	D

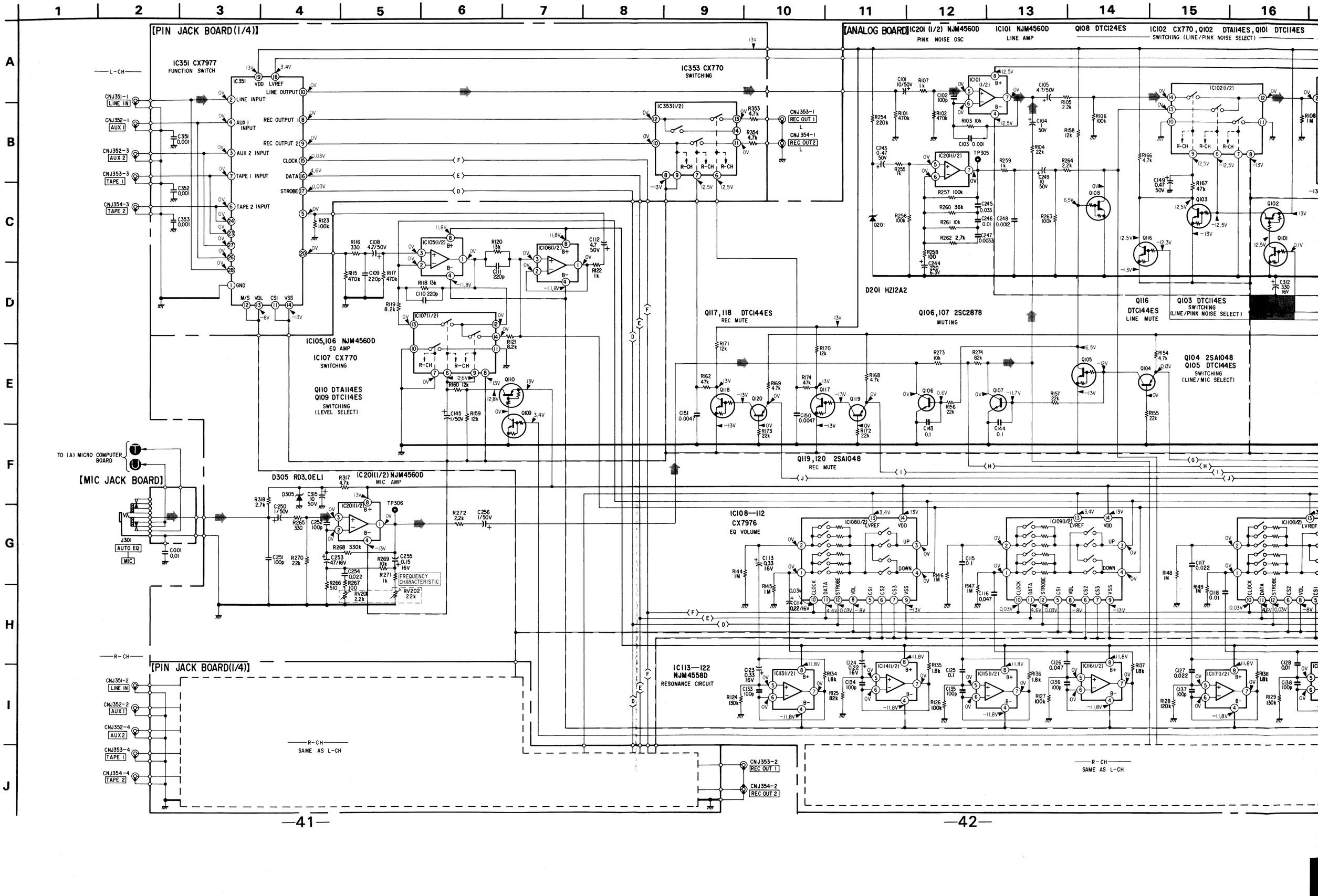


Note:

- Color code of sleeving over the end of the jacket.

- ○— : parts extracted from the component side.
- ■ : part mounted on the conductor side.
- : B + pattern
- : signal path
- : L-CH signal path
- : R-CH signal path

5-4. SCHEMATIC DIAGRAM • Refer to page 36 for notes.



15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

A B C D E F G H I J

CX770, Q102 DTA114ES, Q101 DTC114ES
CHING (LINE/PINK NOISE SELECT)

IC103 CX7978
STEP VOLUME

IC104 NJM4560D
LINE OUTPUT AMP

Q112 2SC2878
LINE MUTE

[PIN JACK BOARD(1/4)]

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Q103 DTC114ES
SWITCHING
(LINE/PINK NOISE SELECT)

Q104 2SA1048
Q105 DTC144ES
SWITCHING
(LINE/MIC SELECT)

D101 1SS202
LINE MUTE

Q111 2SA1048
Q114 DTA114ES
Q115 DTC114ES
LINE MUTE

TO SYSTEM CONTROL BOARD

PL502
(LCD ILLUMINATION)
PL501

Q301 2SD669
Q302 2SC2603
VOL. REG.

D301 S2VB20
RECT

TO T801
POWER TRANSFORMER

Q305 2SC2603
VOL. REG.

D302,303 RD15EL3

D304
RD5.6EL2

Q303 2SB649, Q304 2SA1048
VOL. REG.

[PIN JACK BOARD(1/4)]

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

A B C D E F G H I J

CX770, Q102 DTA114ES, Q101 DTC114ES
CHING (LINE/PINK NOISE SELECT)

IC103 CX7978
STEP VOLUME

IC104 NJM4560D
LINE OUTPUT AMP

Q112 2SC2878
LINE MUTE

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

[PIN JACK BOARD(1/4)]

R351 470
CNJ351-3 LINE OUT L

IC102(1/2)
R-CH R-CH R-CH
R167 47k
Q103
Q102
Q101
C312 330 16V
Q103 DTC114ES SWITCHING (LINE/PINK NOISE SELECT)

IC103(1/2)
VDD LVREF
IN OUT
STROBE DATA CLOCK
VSS CS2 GND TND CSI M/S VDL
R108 1M
C106 1/50V
R109 1M
R114 470k (1/4W)
R111 4.7k (1/4W)
IC104 (1/2)
R110 12k(1/4W)
C107 10/50V
R112 2.2k
R113 470k
Q112
R164 47k
C147 0.027

R311 330Ω/2W ⚠
C311 330 16V

D101 1SS202
LINE MUTE
R161 4.7k
C146 220 16V
Q111
Q114
Q115
R163 22k

Q111 2SA1048
Q114 DTA114ES
Q115 DTC114ES
LINE MUTE

TP304 R315 1.5k
R316 3.6k
C316 1 50V

Q104 2SA1048
Q105 DTC144ES
SWITCHING (LINE/MIC SELECT)

(D) (E) (F) (G) (H) (I) (J)

(LINE MUTING)
(STROBE)
(DATA)
(CLOCK)
TO SYSTEM CONTROL BOARD

PL502 (LCD ILLUMINATION)
PL501

R319 47 (2W) ⚠

Q301 2SD669
Q302 2SC2603
VOL. REG.

D301 S2VB20
RECT

TP301
Q301
Q302
R301 4.7Ω(1/4W) ⚠
R303 330(1/4W) ⚠
C313 330 16V
R304 2.7k (1/4W)
R308 1k
C307 330 16V
C305 220 25V
D302
C302 1000 25V ⚠
D302,303 RD15EL3
D301

TO T801 POWER TRANSFORMER

Q305 2SC2603
VOL. REG.

TP303
Q305
R310 2.2k (1/4W)
C314 330 16V
C310 10 50V
C309 33 16V
D304
R314 330(1/4W) ⚠
D304 RD5.6EL2
TP302

C306 100 25V
D303
C308 330 16V
R309 1k
Q304
Q303
R305 2.7k (1/4W)
R302 4.7Ω(1/4W) ⚠
C301 1000 25V ⚠

GND
TO SYSTEM CONTROL BOARD

Q303 2SB649, Q304 2SA1048
VOL. REG.

IC110(1/2) IC111(1/2) IC112(1/2)
LVREF VDD UP DOWN
CLOCK DATA STROBE CS2 VOL CS1 CS3 VSS
R150 1M R152 1M R153 1M
C117 0.022 C119 0.0056 C121 0.0015
R149 1M C118 0.01 C120 0.0027 C122 750p

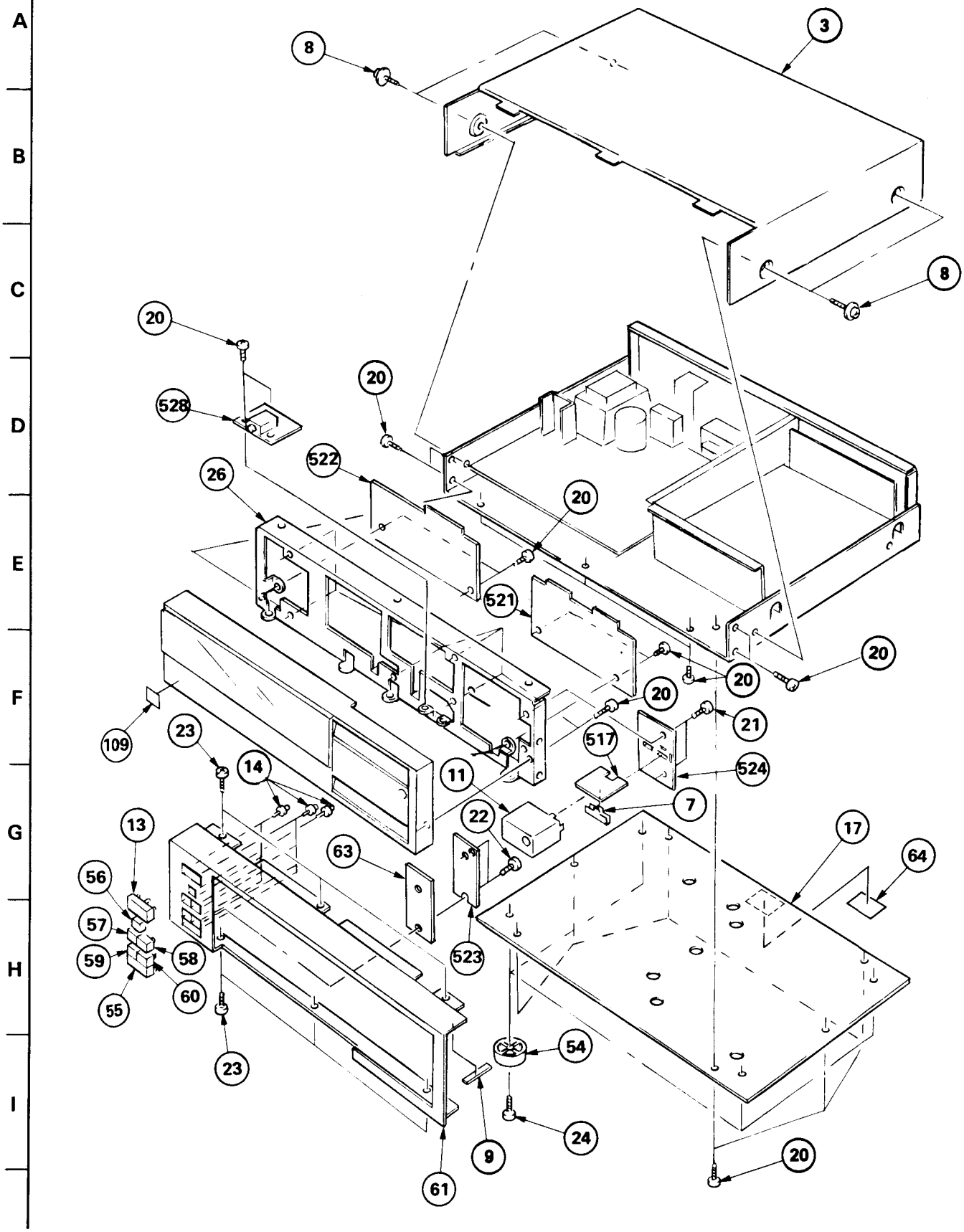
IC117(1/2) IC118(1/2) IC119(1/2) IC120(1/2) IC121(1/2) IC122(1/2)
C127 0.022 C128 0.01 C129 0.0056 C130 0.0027 C131 0.0015 C132 750p
C137 100p C138 100p C139 100p C140 100p C141 100p C142 100p
R129 130k R130 110k R131 120k R132 120k R133 120k
R138 1.8k R139 1.8k R140 1.8k R141 1.8k R142 1.5k R143 1.5k

[PIN JACK BOARD(1/4)]
R352
CNJ351-4 LINE OUT R

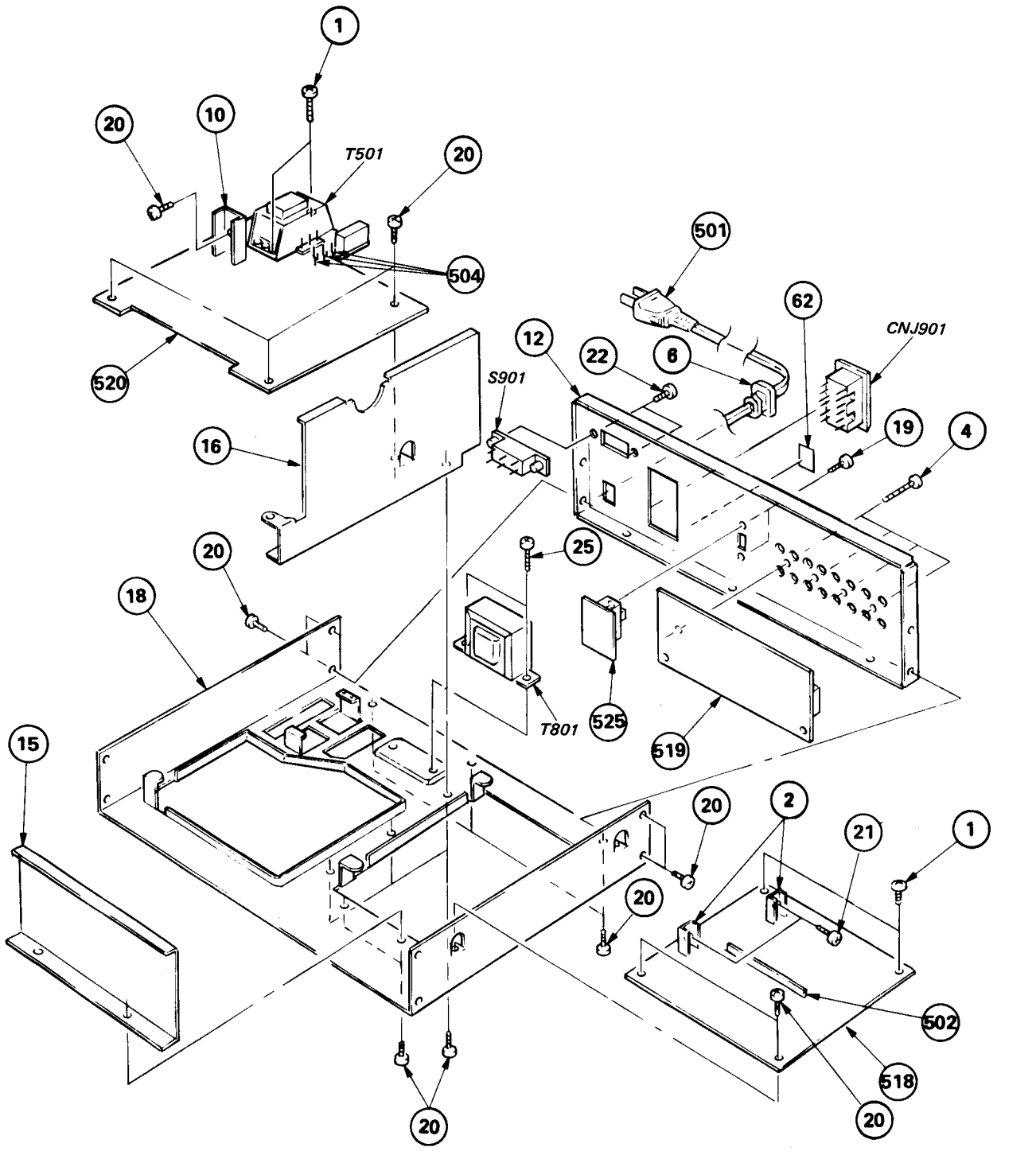
—43— —44—

SECTION 6
EXPLODED VIEWS AND PARTS LIST

6-1.



6-2.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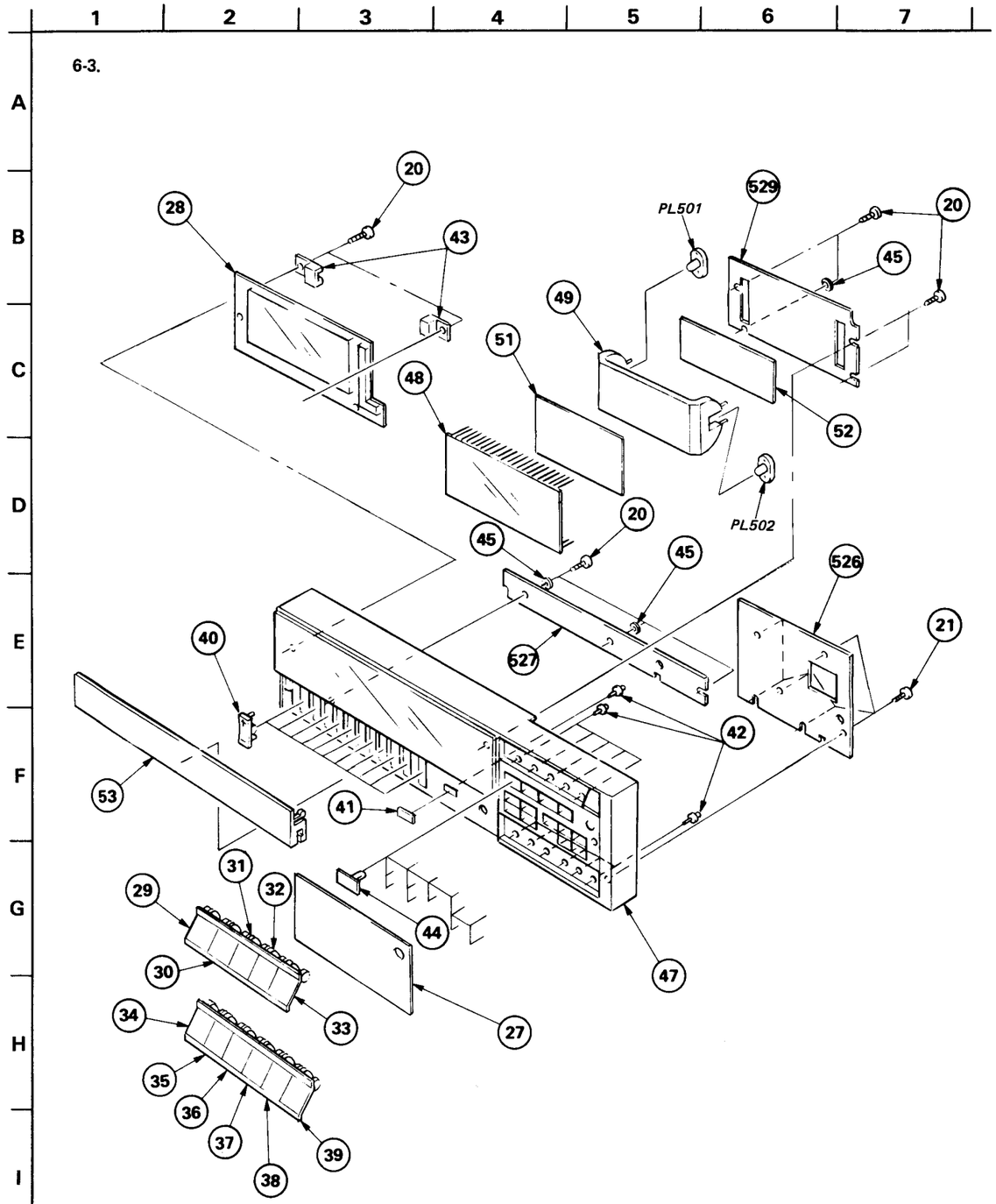

GENERAL SECTION

No.	Part No.	Description
1	2-383-566-00	SCREW
2	*3-312-615-31	HEAT SINK
3	3-575-539-41	CASE
4	3-701-589-21	SCREW, SELF-TAPPING
5	3-701-748-00	CLAMP
6	3-703-244-00	(AEP,E).....BUSHING, CORD
6	4-901-417-00	(US,Canadian)...BUSHING, CORD
7	*4-348-551-00	PLATE, SHIELD
8	4-889-321-11	SCREW
9	4-858-767-00	COVER, LAMP
10	*4-880-403-00	HEAT SINK
11	*4-888-110-00	CASE, SHIELD
12	4-905-402-11	(US,Canadian)...PLATE, JACK
12	4-905-408-01	(AEP,E).....PLATE, JACK
13	4-905-411-01	KNOB (G)
14	4-905-417-01	STOPPER, KNOB
15	*4-905-419-01	PLATE (A), SHIELD
16	*4-905-420-01	PLATE (B), SHIELD
17	*4-905-425-01	PLATE, BOTTOM
18	*4-905-428-01	CHASSIS
19	7-621-775-10	SCREW +B 2.6X4
20	7-685-871-01	SCREW +BVTT 3X6 (S)
21	7-685-752-04	SCREW +BVTT 3X8 (S)
22	7-685-146-19	SCREW +BTP 3X8 TYPE2 N-S
23	7-685-751-09	SCREW +BVTT 3X6 (S)
24	7-685-873-01	SCREW +BVTT 3X10 (S)
25	7-685-880-01	SCREW +BVTT 4X6 (S)
26	*9-984-001-01	PANEL, SUB
27	9-984-002-01	SHEET
28	9-984-003-01	UNIT, LED
29	9-984-006-01	KNOB
30	9-984-007-01	KNOB
31	9-984-008-01	KNOB
32	9-984-009-01	KNOB
33	9-984-010-01	KNOB
34	9-984-011-01	KNOB
35	9-984-012-01	KNOB
36	9-984-013-01	KNOB
37	9-984-014-01	KNOB
38	9-984-015-01	KNOB
39	9-984-016-01	KNOB
40	9-984-017-01	KNOB
41	9-984-018-01	KNOB
42	9-984-019-01	STOPPER

GENERAL SECTION

No.	Part No.	Description
43	*9-984-020-01	RETAINER
44	*9-984-021-01	DUMMY KEY
45	*9-984-022-01	WASHER
46	*9-984-023-01	SPRING
47	9-984-024-01	MOLD, PANEL ASSY
48	9-984-025-01	DISPLAY PANEL
49	*9-984-026-01	GUIDE LENS
50	.....	
51	*9-984-028-01	FILTER
52	9-984-029-01	REFKECTIVE SHEET
53	X-4905-410-1	DOOR ASSY
54	X-3556-910-0	FOOT ASSY, MF
55	X-4905-401-1	KNOB (F) ASSY
56	X-4905-402-1	KNOB (A) ASSY
57	X-4905-403-1	KNOB (B) ASSY
58	X-4905-404-1	KNOB (C) ASSY
59	X-4905-405-1	KNOB (D) ASSY
60	X-4905-406-1	KNOB (E) ASSY
61	X-4905-408-1	PANEL ASSY
62	4-905-429-01	(US,Canadian)...LABEL, MODEL NUMBER
62	*4-905-430-01	(AEP,E).....LABEL, MODEL NUMBER
63	*4-905-432-01	CUSHION, KNOB
64	3-703-680-00	(US,Canadian)...LABEL, CAUTION, SUB

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

- All capacitors are in µF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:µF, PF:µµF.

COILS

- MMH : mH, UH : µH

SEMICONDUCTORS

In each case, U : µ, for example:
UA···: µA···, UPA···: µPA···, UPC···: µPC, UPD···: µPD···

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
101	1-551-734-11	CORD, CONNECTION (RK-74A)
102	*2-081-001-00	STAND
103	*2-081-003-00	PLATE, ORNAMENTAL
104	*2-081-008-00	PLATE, BOTTOM
105	*2-081-018-02	SUPPORT
106	2-375-002-00	SLIDER
107	2-375-012-00	BAG, PROTECTION
108	3-304-973-00	SHEET, PROTECTION
109	3-314-918-00	BAG, POLYETHYLENE
110	3-701-625-00	BAG, POLYETHYLENE
111	3-701-630-00	BAG, POLYETHYLENE
112	3-703-710-41	STICKER, SONY SYMBOL (12)
113	3-773-804-11	MANUAL, INSTRUCTION
114	*4-809-913-XX	FOOT, F
115	4-905-404-01	CUSHION (LEFT), LOWER
116	4-905-405-01	CUSHION (RIGHT), LOWER
117	4-905-406-01	CUSTION (LEFT), UPPER
118	4-905-407-01	CUSHION (RIGHT), UPPER
119	4-905-413-01	ROD, STAND
120	4-905-415-01	ADAPTOR, STAND
121	*4-905-418-01	LABEL, STAND
122	4-905-431-01	SEAL, INDEX
123	4-905-434-01	INDIVIDUAL CARTON
124	7-682-176-09	SCREW +P 5X12
125	7-688-005-02	W 5, SMALL
126	8-810-063-90	ECM-150SEQ SET
127	A-4490-187-A	REMOTE CONTROL ASSY
128	⚠.1-506-401-11	(E)....AC PLUG ADAPTOR

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
501	⚠.1-534-817-XX	(AEP,E).....CORD, POWER, EULO PLUG			
501	⚠.1-551-511-00	(US,Canadian).....CORD, POWER			
502	*1-560-242-71	BUS BAR 6P			
503	*1-562-249-00	SOCKET, CONNECTOR 4P			
504	1-535-416-00	TERMINAL			
505-516	.....				
517	*1-610-319-00	PC BOARD, REMOTE CONTROL			
518	*1-612-539-12	PC BOARD, ANALOG			
518	*A-4358-130-A	MOUNTED PCB, ANALOG			
519	*1-612-540-11	PC BOARD, PIN JACK			
520	*A-4375-191-A	(US,Canadian)...MOUNTED PCB, SYSTEM CONTROL			
520	*A-4375-196-A	(AEP,E).MOUNTED PCB, SYSTEM CONTROL			
521	*1-612-542-11	PC BOARD, (A) MICRO COMPUTER			
522	*1-612-543-11	PC BOARD, (C) MICRO COMPUTER			
523	*1-612-544-11	PC BOARD, POWER SW			
524	*1-612-545-12	PC BOARD, REMOCON FITTING			
525	*1-612-546-11	PC BOARD, BEEP SW			
526	9-984-005-01	PC BOARD, FUNCTION			
527	9-984-031-01	PC BOARD, EQ UP/DOWN			
528	9-984-032-01	PC BOARD, MIC JACK			
529	9-984-027-01	PC BOARD, LCD			
BATT501	1-528-120-00	BATTERY, LITHIUM (CR-2025)			
BZ501	1-529-025-00	BUZZER			
C001	1-101-004-00	CERAMIC	0.01MF		50V
C101	1-123-356-00	ELECT	10MF	20%	50V
C102	1-102-973-00	CERAMIC	100PF	5%	50V
C103	1-102-074-00	CERAMIC	0.001MF	10%	50V
C104	1-123-380-00	ELECT	1MF	20%	50V
C105	1-123-369-00	ELECT	4.7MF	20%	50V
C106	1-123-380-00	ELECT	1MF	20%	50V
C107	1-124-186-00	ELECT	10MF	20%	50V
C108	1-123-369-00	ELECT	4.7MF	20%	50V
C109	1-102-978-00	CERAMIC	220PF	5%	50V
C110	1-102-978-00	CERAMIC	220PF	5%	50V
C111	1-102-978-00	CERAMIC	220PF	5%	50V
C112	1-123-369-00	ELECT	4.7MF	20%	50V
C113	1-127-469-00	ELECT(SOLID)	0.33MF	5%	16V
C114	1-127-468-00	ELECT(SOLID)	0.22MF	5%	16V
C115	1-136-165-00	FILM	0.1MF	5%	50V
C116	1-108-595-00	MYLAR	0.047MF	5%	50V
C117	1-108-587-00	MYLAR	0.022MF	5%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C118	1-108-579-00	MYLAR	0.01MF	5%	50V
C119	1-106-190-00	MYLAR	0.0056MF	5%	50V
C120	1-106-182-00	MYLAR	0.0027MF	5%	50V
C121	1-106-176-00	MYLAR	0.0015MF	5%	50V
C122	1-104-074-00	POLYSTYRENE	750PF	5%	50V
C123	1-127-469-00	ELECT(SOLID)	0.33MF	5%	16V
C124	1-127-468-00	ELECT(SOLID)	0.22MF	5%	16V
C125	1-136-165-00	FILM	0.1MF	5%	50V
C126	1-108-595-00	MYLAR	0.047MF	5%	50V
C127	1-108-587-00	MYLAR	0.022MF	5%	50V
C128	1-108-579-00	MYLAR	0.01MF	5%	50V
C129	1-106-190-00	MYLAR	0.0056MF	5%	50V
C130	1-106-182-00	MYLAR	0.0027MF	5%	50V
C131	1-106-176-00	MYLAR	0.0015MF	5%	50V
C132	1-104-074-00	POLYSTYRENE	750PF	5%	50V
C133	1-162-282-31	CERAMIC	100PF	10%	50V
C134	1-162-282-31	CERAMIC	100PF	10%	50V
C135	1-162-282-31	CERAMIC	100PF	10%	50V
C136	1-162-282-31	CERAMIC	100PF	10%	50V
C137	1-162-282-31	CERAMIC	100PF	10%	50V
C138	1-162-282-31	CERAMIC	100PF	10%	50V
C139	1-162-282-31	CERAMIC	100PF	10%	50V
C140	1-162-282-31	CERAMIC	100PF	10%	50V
C141	1-162-282-31	CERAMIC	100PF	10%	50V
C142	1-162-282-31	CERAMIC	100PF	10%	50V
C143	1-136-165-00	FILM	0.1MF	5%	50V
C144	1-136-165-00	FILM	0.1MF	5%	50V
C145	1-123-380-00	ELECT	1MF	20%	50V
C146	1-123-321-00	ELECT	220MF	20%	16V
C147	1-108-589-00	MYLAR	0.027MF	5%	50V
C148	1-108-589-00	MYLAR	0.027MF	5%	50V
C149	1-123-610-00	ELECT	0.47MF	20%	50V
C150	1-106-188-00	MYLAR	0.0047MF	5%	50V
C151	1-106-188-00	MYLAR	0.0047MF	5%	50V
C243	1-123-610-00	ELECT	0.47MF	20%	50V
C244	1-123-308-00	ELECT	220MF	20%	6.3V
C245	1-108-591-00	MYLAR	0.033MF	5%	50V
C246	1-108-579-00	MYLAR	0.01MF	5%	50V
C247	1-106-184-00	MYLAR	0.0033MF	5%	50V
C248	1-108-557-00	MYLAR	0.0012MF	5%	50V
C249	1-123-356-00	ELECT	10MF	20%	50V
C250	1-123-380-00	ELECT	1MF	20%	50V
C251	1-102-973-00	CERAMIC	100PF	5%	50V
C252	1-102-973-00	CERAMIC	100PF	5%	50V
C253	1-123-332-00	ELECT	47MF	20%	16V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C254	1-108-587-00	MYLAR	0.022MF	5%	50V
C255	1-127-467-00	ELECT(SOLID)	0.15MF	5%	16V
C301	⚠ 1-123-349-00	ELECT	1000MF	20%	25V
C302	⚠ 1-123-338-00	ELECT	2200MF	20%	25V
C305	1-123-334-00	ELECT	220MF	20%	25V
C306	1-123-345-00	ELECT	100MF	20%	25V
C307	1-123-322-00	ELECT	330MF	20%	16V
C308	1-123-322-00	ELECT	330MF	20%	16V
C309	1-123-318-00	ELECT	33MF	20%	16V
C310	1-123-356-00	ELECT	10MF	20%	50V
C311	1-123-322-00	ELECT	330MF	20%	16V
C312	1-123-322-00	ELECT	330MF	20%	16V
C313	1-123-322-00	ELECT	330MF	20%	16V
C314	1-123-322-00	ELECT	330MF	20%	16V
C315	1-123-356-00	ELECT	10MF	20%	50V
C316	1-123-380-00	ELECT	1MF	20%	50V
C351	1-161-323-00	CERAMIC	0.001MF	10%	50V
C352	1-161-323-00	CERAMIC	0.001MF	10%	50V
C353	1-161-323-00	CERAMIC	0.001MF	10%	50V
C401	1-101-004-00	CERAMIC	0.01MF		50V
C402	1-123-617-00	ELECT	10MF	20%	16V
C403	1-123-617-00	ELECT	10MF	20%	16V
C404	1-123-617-00	ELECT	10MF	20%	16V
C405	1-108-591-00	MYLAR	0.033MF	5%	50V
C406	1-123-617-00	ELECT	10MF	20%	16V
C407	1-106-184-00	MYLAR	0.0033MF	5%	50V
C451	1-123-307-00	ELECT	100MF	20%	6.3V
C452	1-123-307-00	ELECT	100MF	20%	6.3V
C501	1-127-469-00	ELECT(SOLID)	0.33MF	5%	16V
C502	1-127-469-00	ELECT(SOLID)	0.33MF	5%	16V
C503	1-127-468-00	ELECT(SOLID)	0.22MF	5%	16V
C504	1-127-467-00	ELECT(SOLID)	0.15MF	5%	16V
C505	1-127-466-00	ELECT(SOLID)	0.1MF	5%	16V
C506	1-127-466-00	ELECT(SOLID)	0.1MF	5%	16V
C507	1-108-595-00	MYLAR	0.047MF	5%	50V
C508	1-108-595-00	MYLAR	0.047MF	5%	50V
C509	1-108-587-00	MYLAR	0.022MF	5%	50V
C510	1-108-587-00	MYLAR	0.022MF	5%	50V
C511	1-108-579-00	MYLAR	0.01MF	5%	50V
C512	1-108-579-00	MYLAR	0.01MF	5%	50V
C513	1-106-190-00	MYLAR	0.0056MF	5%	50V
C514	1-106-190-00	MYLAR	0.0056MF	5%	50V
C515	1-106-182-00	MYLAR	0.0027MF	5%	50V
C516	1-106-182-00	MYLAR	0.0027MF	5%	50V
C517	1-106-176-00	MYLAR	0.0015MF	5%	50V
C518	1-106-176-00	MYLAR	0.0015MF	5%	50V

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CAPACITORS:
- All capacitors are in µF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:µF, PF:µµF.

COILS
- MMH : mH, UH : µH

SEMICONDUCTORS
In each case, U : µ, for example:
UA···: µA···, UPA···: µPA···, UPC···: µPC, UPD···: µPD···

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

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ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C519	1-104-074-00	POLYSTYRENE	750PF	5%	50V
C520	1-104-074-00	POLYSTYRENE	750PF	5%	50V
C521	1-161-330-00	CERAMIC	0.01MF	30%	25V
C522	1-161-328-00	CERAMIC	0.0047MF	30%	50V
C523	1-161-328-00	CERAMIC	0.0047MF	30%	50V
C524	1-161-326-00	CERAMIC	0.0022MF	30%	50V
C525	1-161-324-00	CERAMIC	0.0012MF	20%	50V
C526	1-161-321-00	CERAMIC	680PF	10%	50V
C527	1-161-317-00	CERAMIC	330PF	10%	50V
C528	1-161-314-00	CERAMIC	180PF	10%	50V
C529	1-161-270-00	CERAMIC	82PF	5%	50V
C530	1-161-283-00	CERAMIC	22PF	5%	50V
C531	1-123-369-00	ELECT	4.7MF	20%	25V
C532	1-123-369-00	ELECT	4.7MF	20%	25V
C533	1-123-369-00	ELECT	4.7MF	20%	25V
C534	1-123-369-00	ELECT	4.7MF	20%	25V
C535	1-123-369-00	ELECT	4.7MF	20%	25V
C536	1-123-369-00	ELECT	4.7MF	20%	25V
C537	1-123-369-00	ELECT	4.7MF	20%	25V
C538	1-123-369-00	ELECT	4.7MF	20%	25V
C539	1-123-369-00	ELECT	4.7MF	20%	25V
C540	1-123-369-00	ELECT	4.7MF	20%	25V
C541	1-123-382-00	ELECT	3.3MF	20%	50V
C542	1-123-382-00	ELECT	3.3MF	20%	50V
C543	1-123-382-00	ELECT	3.3MF	20%	50V
C544	1-123-382-00	ELECT	3.3MF	20%	50V
C545	1-123-382-00	ELECT	3.3MF	20%	50V
C546	1-123-382-00	ELECT	3.3MF	20%	50V
C547	1-123-382-00	ELECT	3.3MF	20%	50V
C548	1-123-382-00	ELECT	3.3MF	20%	50V
C549	1-123-382-00	ELECT	3.3MF	20%	50V
C550	1-123-382-00	ELECT	3.3MF	20%	50V
C551	1-123-345-00	ELECT	100MF	20%	25V
C552	1-123-345-00	ELECT	100MF	20%	25V
C553	1-102-529-00	CERAMIC	100PF	5%	50V
C554	1-108-579-00	MYLAR	0.01MF	5%	50V
C555	1-102-529-00	CERAMIC	100PF	5%	50V
C556	1-102-529-00	CERAMIC	100PF	5%	50V
C557	1-106-188-00	MYLAR	0.0047MF	5%	50V
C558	1-123-369-00	ELECT	4.7MF	20%	25V
C559	1-123-333-00	ELECT	100MF	20%	16V
C560	1-123-308-00	ELECT	220MF	20%	10V
C561	1-161-283-00	CERAMIC	22PF	5%	50V
C562	1-161-283-00	CERAMIC	22PF	5%	50V
C563	1-161-323-00	CERAMIC	0.001MF	10%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C564	1-108-579-00	MYLAR	0.01MF	5%	50V
C565	1-123-356-00	ELECT	10MF	20%	16V
C566	1-123-307-00	ELECT	100MF	20%	6.3V
C567	1-124-095-11	ELECT(BLOCK)	10000MF	99%	16V
C568	1-123-332-00	ELECT	47MF	20%	16V
C569	1-123-332-00	ELECT	47MF	20%	16V
C570	1-123-308-00	ELECT	220MF	20%	6.3V
C571	1-161-744-00	CERAMIC	0.01MF		400V
C572	1-123-332-00	ELECT	47MF	20%	16V
C573	1-123-333-00	ELECT	100MF	20%	16V
C574	1-123-326-00	ELECT	3300MF	20%	16V
C575	1-123-332-00	ELECT	47MF	20%	16V
C576	1-123-308-00	ELECT	220MF	20%	6.3V
C580	1-108-595-00	MYLAR	0.047MF	5%	50V
C581	1-123-382-00	ELECT	3.3MF	20%	50V
C582	1-123-381-00	ELECT	2.2MF	20%	50V
C751	1-123-307-00	ELECT	100MF	20%	6.3V
C752	1-123-332-00	ELECT	47MF	20%	16V
C753	1-161-327-00	CERAMIC	0.0033MF	10%	50V
CNJ351	1-507-910-11	JACK, PIN 4P			
CNJ352	1-507-910-11	JACK, PIN 4P			
CNJ353	1-507-910-11	JACK, PIN 4P			
CNJ354	1-507-910-11	JACK, PIN 4P			
⚠CNJ901	1-526-696-00	(US,Canadian)...OUTLET, AC			
CNP101*	1-560-708-00	PIN, CONNECTOR 2P			
CNP102*	1-560-708-00	PIN, CONNECTOR 2P			
CNP103*	1-560-708-00	PIN, CONNECTOR 2P			
CNP104*	1-560-708-00	PIN, CONNECTOR 2P			
CNP105*	1-560-708-00	PIN, CONNECTOR 2P			
CNP451*	1-560-605-00	PIN, CONNECTOR 6P			
CNP452*	1-560-709-00	PIN, CONNECTOR 8P			
CNP453*	1-560-602-00	PIN, CONNECTOR 3P			
CNP454*	1-560-708-00	PIN, CONNECTOR 2P			
CNP455*	1-560-603-00	PIN, CONNECTOR 4P			
CNP456*	1-560-604-00	PIN, CONNECTOR 5P			
CNP457*	1-560-604-00	PIN, CONNECTOR 5P			
CNP458*	1-560-604-00	PIN, CONNECTOR 5P			
CNP459*	1-560-602-00	PIN, CONNECTOR 3P			
CNP460*	1-560-602-00	PIN, CONNECTOR 3P			
CNP461*	1-560-604-00	PIN, CONNECTOR 5P			
CNP462*	1-560-709-00	PIN, CONNECTOR 8P			
CNP463*	1-560-602-00	PIN, CONNECTOR 3P			
CNP501*	1-560-605-00	PIN, CONNECTOR 6P			
CNP502*	1-560-603-00	PIN, CONNECTOR 4P			
CNP503*	1-560-604-00	PIN, CONNECTOR 5P			

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CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
CNP504*	1-560-603-00	PIN, CONNECTOR 4P
CNP505*	1-560-602-00	PIN, CONNECTOR 3P
CNP506*	1-560-708-00	PIN, CONNECTOR 2P
CNP507*	1-560-603-00	PIN, CONNECTOR 4P
CNP508*	1-560-603-00	PIN, CONNECTOR 4P
CNP509*	1-560-603-00	PIN, CONNECTOR 4P
CNP510*	1-560-603-00	PIN, CONNECTOR 4P
CNP751*	1-560-602-00	PIN, CONNECTOR 3P
CNP752*	1-560-708-00	PIN, CONNECTOR 2P
CNP753*	1-560-606-00	PIN, CONNECTOR 7P
CNP754*	1-560-602-00	PIN, CONNECTOR 3P
CNP755*	1-560-603-00	PIN, CONNECTOR 4P
CNP756*	1-560-604-00	PIN, CONNECTOR 5P
CNP757*	1-560-603-00	PIN, CONNECTOR 4P
CNP758*	1-560-708-00	PIN, CONNECTOR 2P
CNP759*	1-560-603-00	PIN, CONNECTOR 4P
CNP760*	1-560-603-00	PIN, CONNECTOR 4P
D1	1-553-856-21	DIODE 1SS53
D2	1-553-856-21	DIODE 1SS53
D3	1-553-856-21	DIODE 1SS53
D4	1-553-856-21	DIODE 1SS53
D5	1-553-856-21	DIODE 1SS53
D6	1-553-856-21	DIODE 1SS53
D7	1-553-856-21	DIODE 1SS53
D8	1-553-856-21	DIODE 1SS53
D9	1-553-856-21	DIODE 1SS53
D10	1-553-856-21	DIODE 1SS53
D11	1-553-856-21	DIODE 1SS53
D12	1-553-856-21	DIODE 1SS53
D13	1-553-856-21	DIODE 1SS53
D14	1-553-856-21	DIODE 1SS53
D15	1-553-856-21	DIODE 1SS53
D16	1-553-856-21	DIODE 1SS53
D17	1-553-856-21	DIODE 1SS53
D18	1-553-856-21	DIODE 1SS53
D19	1-553-856-21	DIODE 1SS53
D20	1-553-856-21	DIODE 1SS53
D22	9-984-030-01	DIODE PR3422S
D23	8-719-918-96	DIODE AA3422S
D24	8-719-918-96	DIODE AA3422S
D25	8-719-918-96	DIODE AA3422S
D26	8-719-918-96	DIODE AA3422S
D27	8-719-918-96	DIODE AA3422S
D28	8-719-918-96	DIODE AA3422S

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D29	8-719-918-96	DIODE AA3422S
D30	8-719-918-96	DIODE AA3422S
D31	8-719-918-96	DIODE AA3422S
D32	8-719-918-96	DIODE AA3422S
D33	8-719-918-96	DIODE AA3422S
D34	8-719-918-96	DIODE AA3422S
D35	8-719-918-96	DIODE AA3422S
D36	8-719-918-96	DIODE AA3422S
D37	8-719-918-96	DIODE AA3422S
D38	8-719-918-96	DIODE AA3422S
D39	8-719-918-96	DIODE AA3422S
D40	8-719-918-96	DIODE AA3422S
D41	8-719-918-96	DIODE AA3422S
D42	8-719-918-96	DIODE AA3422S
D43	8-719-918-96	DIODE AA3422S
D44	8-719-918-96	DIODE AA3422S
D45	8-719-918-96	DIODE AA3422S
D101	8-719-107-94	DIODE 1SS202-1
D201	8-719-904-21	DIODE HZ12A1
D301 ⚠	8-719-502-20	DIODE S2VB20
D302	8-719-101-90	DIODE RD15EL3
D303	8-719-101-90	DIODE RD15EL3
D304	8-719-101-58	DIODE RD5.6EL2
D305	8-719-101-34	DIODE RD3.0EL1
D401	8-719-110-32	DIODE PH302B
D501	8-719-107-94	DIODE 1SS202-1
D502	8-719-107-94	DIODE 1SS202-1
D503	8-719-107-94	DIODE 1SS202-1
D504	8-719-107-94	DIODE 1SS202-1
D505	8-719-107-94	DIODE 1SS202-1
D506	8-719-107-94	DIODE 1SS202-1
D507	8-719-107-94	DIODE 1SS202-1
D508	8-719-107-94	DIODE 1SS202-1
D509	8-719-107-94	DIODE 1SS202-1
D510	8-719-107-94	DIODE 1SS202-1
D511	8-719-107-94	DIODE 1SS202-1
D512	8-719-107-94	DIODE 1SS202-1
D513	8-719-107-94	DIODE 1SS202-1
D514	8-719-107-94	DIODE 1SS202-1
D515	8-719-107-94	DIODE 1SS202-1
D516	8-719-107-94	DIODE 1SS202-1
D517	8-719-107-94	DIODE 1SS202-1
D518	8-719-107-94	DIODE 1SS202-1
D519	8-719-107-94	DIODE 1SS202-1
D520	8-719-107-94	DIODE 1SS202-1
D521	8-719-107-94	DIODE 1SS202-1

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ELECTRICAL PARTS

Ref.No.	Part No.	Description
D522	8-719-101-61	DIODE RD6.2EL2
D523	8-719-107-94	DIODE 1SS202-1
D524	8-719-107-94	DIODE 1SS202-1
D525	8-719-107-94	DIODE 1SS202-1
D526	8-719-101-34	DIODE RD3.0EL1
D527	8-719-942-31	DIODE HZ3ALL
D528	8-719-107-94	DIODE 1SS202-1
D529	8-719-107-94	DIODE 1SS202-1
D530	8-719-107-94	DIODE 1SS202-1
D531	8-719-100-18	DIODE RD3.6EB1
D532	8-719-100-18	DIODE RD3.6EB1
D533 ⚠	8-719-502-20	DIODE S2VB20
D534	8-719-107-94	DIODE 1SS202-1
D535	8-719-101-61	DIODE RD6.2EL2
D536	8-719-107-94	DIODE 1SS202-1
D537	8-719-101-74	DIODE RD9.1EL3
D538 ⚠	8-719-502-20	DIODE S2VB20
D539	8-719-101-61	DIODE RD6.2EL2
D540	8-719-107-94	DIODE 1SS202-1
D541	8-719-107-94	DIODE 1SS202-1
D701	8-719-918-96	DIODE AA3422S
D702	8-719-918-96	DIODE AA3422S
D703	8-719-918-96	DIODE AA3422S
D704	8-719-918-96	DIODE AA3422S
D705	8-719-918-96	DIODE AA3422S
D706	8-719-918-96	DIODE AA3422S
D707	8-719-107-94	DIODE 1SS202-1
D751	8-719-107-94	DIODE 1SS202-1
D752	8-719-107-94	DIODE 1SS202-1
D753	8-719-107-94	DIODE 1SS202-1
D754	8-719-107-94	DIODE 1SS202-1
D755	8-719-107-94	DIODE 1SS202-1
IC1	8-759-907-65	IC CX-765
IC2	8-759-907-65	IC CX-765
IC101	8-759-745-60	IC NJM4560D
IC102	8-759-307-70	IC CX-770A
IC103	8-759-909-99	IC CX-7978
IC104	8-759-745-60	IC NJM4560D
IC105	8-759-745-60	IC NJM4560D
IC106	8-759-745-60	IC NJM4560D
IC107	8-759-307-70	IC CX-770A
IC108	8-759-909-98	IC CX-7976
IC109	8-759-909-98	IC CX-7976
IC110	8-759-909-98	IC CX-7976
IC111	8-759-909-98	IC CX-7976

ELECTRICAL PARTS

Ref.No.	Part No.	Description
IC112	8-759-909-98	IC CX-7976
IC113	8-759-145-58	IC UPC4558C
IC114	8-759-145-58	IC UPC4558C
IC115	8-759-145-58	IC UPC4558C
IC116	8-759-145-58	IC UPC4558C
IC117	8-759-145-58	IC UPC4558C
IC118	8-759-145-58	IC UPC4558C
IC119	8-759-145-58	IC UPC4558C
IC120	8-759-145-58	IC UPC4558C
IC121	8-759-145-58	IC UPC4558C
IC122	8-759-145-58	IC UPC4558C
IC201	8-759-145-60	IC UPC4558C
IC351	8-757-977-00	IC CX-7977
IC352	8-757-977-00	IC CX-7977
IC353	8-759-307-70	IC CX-770A
IC401	8-759-113-73	IC UPC1373H
IC451	8-755-650-50	IC CX565-050
IC452	8-759-601-04	IC M54560P
IC453	8-759-601-04	IC M54560P
IC454	8-759-900-42	IC SN74LS42N
IC455	8-759-601-03	IC M54566P
IC456	8-759-900-42	IC SN74LS42N
IC457	8-759-601-03	IC M54566P
IC458	8-759-900-42	IC SN74LS42N
IC459	8-759-601-04	IC M54560P
IC460	8-759-601-04	IC M54560P
IC501	8-759-911-86	IC MB88421-144M
IC502	8-759-255-01	IC TC5501P
IC503	8-759-240-93	IC TC4093BP
IC504	8-759-220-00	IC TC40H000P
IC505	8-759-600-96	IC M50760-410P
IC506	8-759-145-58	IC UPC4558C
IC507	8-759-800-93	IC LC7910
IC508	8-759-240-51	IC TC4051BP
IC509	8-759-240-51	IC TC4051BP
IC510	8-759-145-58	IC UPC4558C
IC511	8-759-145-58	IC UPC4558C
IC512	8-759-240-52	IC TC4052BP
IC513	8-759-145-58	IC UPC4558C
IC514	8-759-145-58	IC UPC4558C
IC515	8-759-145-58	IC UPC4558C
IC516	8-759-145-58	IC UPC4558C
IC517	8-759-145-58	IC UPC4558C
IC518	8-759-145-58	IC UPC4558C
IC519	8-759-145-58	IC UPC4558C

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ELECTRICAL PARTS

Ref.No.	Part No.	Description
IC520	8-759-145-58	IC UPC4558C
IC521	8-759-145-58	IC UPC4558C
IC522	8-759-145-58	IC UPC4558C
IC523	8-759-145-58	IC UPC4558C
IC751	8-755-650-40	IC CX565-040
L401	1-404-310-00	COIL
PL501	1-518-560-11	LAMP, PILOT
PL502	1-518-560-11	LAMP, PILOT
Q101	8-729-900-80	TRANSISTOR DTC114ES
Q102	8-729-900-61	TRANSISTOR DTA114ES
Q103	8-729-900-80	TRANSISTOR DTC114ES
Q104	8-729-117-54	TRANSISTOR 2SA1175
Q105	8-729-900-89	TRANSISTOR DTC144ES
Q106	8-729-201-04	TRANSISTOR 2SC2878
Q107	8-729-201-04	TRANSISTOR 2SC2878
Q108	8-729-900-36	TRANSISTOR DTC124ES
Q109	8-729-900-80	TRANSISTOR DTC114ES
Q110	8-729-900-61	TRANSISTOR DTA114ES
Q111	8-729-117-54	TRANSISTOR 2SA1175
Q112	8-729-201-04	TRANSISTOR 2SC2878
Q113	8-729-201-04	TRANSISTOR 2SC2878
Q114	8-729-900-61	TRANSISTOR DTA114ES
Q115	8-729-900-80	TRANSISTOR DTC114ES
Q116	8-729-900-89	TRANSISTOR DTC144ES
Q117	8-729-900-89	TRANSISTOR DTC144ES
Q118	8-729-900-89	TRANSISTOR DTC144ES
Q119	8-729-117-54	TRANSISTOR 2SA1175
Q120	8-729-117-54	TRANSISTOR 2SA1175
Q301	8-729-306-92	TRANSISTOR 2SD669A
Q302	8-729-245-83	TRANSISTOR 2SC2458
Q303	8-729-304-92	TRANSISTOR 2SB649A
Q304	8-729-117-54	TRANSISTOR 2SA1175
Q305	8-729-245-83	TRANSISTOR 2SC2458
Q501	8-729-245-83	TRANSISTOR 2SC2458
Q502	8-729-245-83	TRANSISTOR 2SC2458
Q503	8-729-245-83	TRANSISTOR 2SC2458
Q504	8-729-245-83	TRANSISTOR 2SC2458
Q505	8-729-245-83	TRANSISTOR 2SC2458
Q506	8-729-245-83	TRANSISTOR 2SC2458
Q507	8-729-245-83	TRANSISTOR 2SC2458
Q508	8-729-245-83	TRANSISTOR 2SC2458
Q509	8-729-245-83	TRANSISTOR 2SC2458
Q510	8-729-245-83	TRANSISTOR 2SC2458
Q511	8-729-245-83	TRANSISTOR 2SC2458

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
Q512	8-729-900-89	TRANSISTOR DTC144ES			
Q513	8-729-245-83	TRANSISTOR 2SC2458			
Q514	8-729-117-54	TRANSISTOR 2SA1175			
Q515	8-729-900-80	TRANSISTOR DTC114ES			
Q516	8-729-900-80	TRANSISTOR DTA114ES			
Q517	8-729-245-83	TRANSISTOR 2SC2458			
Q518	8-729-288-02	TRANSISTOR 2SD880			
Q519	8-729-177-43	TRANSISTOR 2SD774			
Q520	8-729-900-80	TRANSISTOR DTC114ES			
Q521	8-729-245-83	TRANSISTOR 2SC2458			
Q522	8-729-245-83	TRANSISTOR 2SC2458			
Q523	⚠ 8-729-288-02	TRANSISTOR 2SD880			
Q751	8-729-900-91	TRANSISTOR DTA114ES			
Q752	8-729-900-89	TRANSISTOR DTC144ES			
Q753	8-729-900-89	TRANSISTOR DTA114ES			
R101	1-247-895-00	CARBON	470K	5%	1/6W
R102	1-247-895-00	CARBON	470K	5%	1/6W
R103	1-247-855-00	CARBON	10K	5%	1/6W
R104	1-247-863-00	CARBON	22K	5%	1/6W
R105	1-247-839-00	CARBON	2.2K	5%	1/6W
R106	1-247-879-00	CARBON	100K	5%	1/6W
R107	1-247-831-00	CARBON	1K	5%	1/6W
R108	1-247-903-00	CARBON	1M	5%	1/6W
R109	1-247-903-00	CARBON	1M	5%	1/6W
R110	1-247-157-00	CARBON	12K	5%	1/4W
R111	1-247-147-00	CARBON	4.7K	5%	1/4W
R112	1-247-839-00	CARBON	2.2K	5%	1/6W
R113	1-247-895-00	CARBON	470K	5%	1/6W
R114	1-246-537-00	CARBON	470K	5%	1/4W
R115	1-247-895-00	CARBON	470K	5%	1/6W
R116	1-247-819-00	CARBON	330	5%	1/6W
R117	1-247-895-00	CARBON	470K	5%	1/6W
R118	1-247-858-00	CARBON	13K	5%	1/6W
R119	1-247-853-00	CARBON	8.2K	5%	1/6W
R120	1-247-858-00	CARBON	13K	5%	1/6W
R121	1-247-853-00	CARBON	8.2K	5%	1/6W
R122	1-247-831-00	CARBON	1K	5%	1/6W
R123	1-247-879-00	CARBON	100K	5%	1/6W
R124	1-247-882-00	CARBON	130K	5%	1/6W
R125	1-247-877-00	CARBON	82K	5%	1/6W
R126	1-247-879-00	CARBON	100K	5%	1/6W
R127	1-247-879-00	CARBON	100K	5%	1/6W
R128	1-247-881-00	CARBON	120K	5%	1/6W
R129	1-247-882-00	CARBON	130K	5%	1/6W
R130	1-247-880-00	CARBON	110K	5%	1/6W

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ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R131	1-247-881-00	CARBON	120K	5%	1/6W	
R132	1-247-881-00	CARBON	120K	5%	1/6W	
R133	1-247-881-00	CARBON	120K	5%	1/6W	
R134	1-247-837-00	CARBON	1.8K	5%	1/6W	
R135	1-247-837-00	CARBON	1.8K	5%	1/6W	
R136	1-247-837-00	CARBON	1.8K	5%	1/6W	
R137	1-247-837-00	CARBON	1.8K	5%	1/6W	
R138	1-247-837-00	CARBON	1.8K	5%	1/6W	
R139	1-247-837-00	CARBON	1.8K	5%	1/6W	
R140	1-247-837-00	CARBON	1.8K	5%	1/6W	
R141	1-247-837-00	CARBON	1.8K	5%	1/6W	
R142	1-247-835-00	CARBON	1.5K	5%	1/6W	
R143	1-247-835-00	CARBON	1.5K	5%	1/6W	
R144	1-247-903-00	CARBON	1M	5%	1/6W	
R145	1-247-903-00	CARBON	1M	5%	1/6W	
R146	1-247-903-00	CARBON	1M	5%	1/6W	
R147	1-247-903-00	CARBON	1M	5%	1/6W	
R148	1-247-903-00	CARBON	1M	5%	1/6W	
R149	1-247-903-00	CARBON	1M	5%	1/6W	
R150	1-247-903-00	CARBON	1M	5%	1/6W	
R151	1-247-903-00	CARBON	1M	5%	1/6W	
R152	1-247-903-00	CARBON	1M	5%	1/6W	
R153	1-247-903-00	CARBON	1M	5%	1/6W	
R154	1-247-847-00	CARBON	4.7K	5%	1/6W	
R155	1-247-863-00	CARBON	22K	5%	1/6W	
R156	1-247-863-00	CARBON	22K	5%	1/6W	
R157	1-247-863-00	CARBON	22K	5%	1/6W	
R158	1-247-857-00	CARBON	12K	5%	1/6W	
R159	1-247-857-00	CARBON	12K	5%	1/6W	
R160	1-247-857-00	CARBON	12K	5%	1/6W	
R161	1-247-847-00	CARBON	4.7K	5%	1/6W	
R162	1-247-871-00	CARBON	47K	5%	1/6W	
R163	1-247-863-00	CARBON	22K	5%	1/6W	
R164	1-247-871-00	CARBON	47K	5%	1/6W	
R165	1-247-871-00	CARBON	47K	5%	1/6W	
R166	1-247-847-00	CARBON	4.7K	5%	1/6W	
R167	1-247-871-00	CARBON	47K	5%	1/6W	
R168	1-247-847-00	CARBON	4.7K	5%	1/6W	
R169	1-247-847-00	CARBON	4.7K	5%	1/6W	
R170	1-247-857-00	CARBON	12K	5%	1/6W	
R171	1-247-857-00	CARBON	12K	5%	1/6W	
R172	1-247-863-00	CARBON	22K	5%	1/6W	
R173	1-247-863-00	CARBON	22K	5%	1/6W	
R174	1-247-871-00	CARBON	47K	5%	1/6W	
R254	1-247-887-00	CARBON	220K	5%	1/6W	

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R255	1-247-831-00	CARBON	1K	5%	1/6W	
R256	1-247-879-00	CARBON	100K	5%	1/6W	
R257	1-247-879-00	CARBON	100K	5%	1/6W	
R258	1-247-807-00	CARBON	100	5%	1/6W	
R259	1-247-831-00	CARBON	1K	5%	1/6W	
R260	1-247-868-00	CARBON	36K	5%	1/6W	
R261	1-247-855-00	CARBON	10K	5%	1/6W	
R262	1-247-841-00	CARBON	2.7K	5%	1/6W	
R263	1-247-879-00	CARBON	100K	5%	1/6W	
R264	1-247-839-00	CARBON	2.2K	5%	1/6W	
R265	1-247-819-00	CARBON	330	5%	1/6W	
R266	1-247-824-00	CARBON	510	5%	1/6W	
R267	1-247-807-00	CARBON	100	5%	1/6W	
R268	1-247-891-00	CARBON	330K	5%	1/6W	
R269	1-247-855-00	CARBON	10K	5%	1/6W	
R270	1-247-863-00	CARBON	22K	5%	1/6W	
R271	1-247-831-00	CARBON	1K	5%	1/6W	
R272	1-247-839-00	CARBON	2.2K	5%	1/6W	
R273	1-247-855-00	CARBON	10K	5%	1/6W	
R301 ⚠	1-217-383-00	FUSIBLE	4.7	5%	1/4W	F
R302 ⚠	1-217-383-00	FUSIBLE	4.7	5%	1/4W	F
R303 ⚠	1-217-383-00	FUSIBLE	4.7	5%	1/4W	F
R304	1-247-141-00	CARBON	2.7K	5%	1/4W	
R305	1-247-141-00	CARBON	2.7K	5%	1/4W	
R308	1-247-831-00	CARBON	1K	5%	1/6W	
R309	1-247-831-00	CARBON	1K	5%	1/6W	
R310	1-247-139-00	CARBON	2.2K	5%	1/4W	
R311 ⚠	1-247-095-00	CARBON	33	5%	1/4W	F
R312 ⚠	1-247-095-00	CARBON	33	5%	1/4W	F
R313 ⚠	1-247-095-00	CARBON	33	5%	1/4W	F
R314 ⚠	1-247-095-00	CARBON	33	5%	1/4W	F
R315	1-247-835-00	CARBON	1.5K	5%	1/6W	
R316	1-247-844-00	CARBON	3.6K	5%	1/6W	
R317	1-247-847-00	CARBON	4.7K	5%	1/6W	
R318	1-247-841-00	CARBON	2.7K	5%	1/6W	
R319 ⚠	1-206-479-00	METAL OXIDE	47	5%	2W	F
R351	1-247-823-00	CARBON	470	5%	1/6W	
R352	1-247-823-00	CARBON	470	5%	1/6W	
R353	1-247-847-00	CARBON	4.7K	5%	1/6W	
R354	1-247-847-00	CARBON	4.7K	5%	1/6W	
R355	1-247-847-00	CARBON	4.7K	5%	1/6W	
R356	1-247-847-00	CARBON	4.7K	5%	1/6W	
R401	1-247-831-00	CARBON	1K	5%	1/6W	
R402	1-247-791-00	CARBON	22	5%	1/6W	
R403	1-247-883-00	CARBON	150K	5%	1/6W	

NOTE:

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CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R451	1-247-799-00	CARBON	47	5%	1/4W
R452	1-247-799-00	CARBON	47	5%	1/4W
R453	1-247-799-00	CARBON	47	5%	1/4W
R454	1-247-799-00	CARBON	47	5%	1/4W
R455	1-247-799-00	CARBON	47	5%	1/4W
R456	1-247-799-00	CARBON	47	5%	1/4W
R457	1-247-799-00	CARBON	47	5%	1/4W
R458	1-247-799-00	CARBON	47	5%	1/4W
R459	1-247-799-00	CARBON	47	5%	1/4W
R460	1-247-799-00	CARBON	47	5%	1/4W
R461	1-247-799-00	CARBON	47	5%	1/4W
R462	1-247-799-00	CARBON	47	5%	1/4W
R463	1-247-799-00	CARBON	47	5%	1/4W
R464	1-247-799-00	CARBON	47	5%	1/4W
R465	1-247-799-00	CARBON	47	5%	1/4W
R466	1-247-799-00	CARBON	47	5%	1/4W
R467	1-247-799-00	CARBON	47	5%	1/4W
R468	1-247-799-00	CARBON	47	5%	1/4W
R469	1-247-799-00	CARBON	47	5%	1/4W
R470	1-247-799-00	CARBON	47	5%	1/4W
R471	1-247-799-00	CARBON	47	5%	1/4W
R472	1-247-799-00	CARBON	47	5%	1/4W
R473	1-247-799-00	CARBON	47	5%	1/4W
R474	1-247-799-00	CARBON	47	5%	1/4W
R475	1-247-799-00	CARBON	47	5%	1/4W
R476	1-247-799-00	CARBON	47	5%	1/4W
R477	1-247-799-00	CARBON	47	5%	1/4W
R478	1-247-799-00	CARBON	47	5%	1/4W
R501	1-247-867-00	CARBON	33K	5%	1/6W
R502	1-247-821-00	CARBON	390	5%	1/6W
R503	1-247-867-00	CARBON	33K	5%	1/6W
R504	1-247-821-00	CARBON	390	5%	1/6W
R505	1-247-867-00	CARBON	33K	5%	1/6W
R506	1-247-821-00	CARBON	390	5%	1/6W
R507	1-247-867-00	CARBON	33K	5%	1/6W
R508	1-247-821-00	CARBON	390	5%	1/6W
R509	1-247-867-00	CARBON	33K	5%	1/6W
R510	1-247-821-00	CARBON	390	5%	1/6W
R511	1-247-867-00	CARBON	33K	5%	1/6W
R512	1-247-821-00	CARBON	390	5%	1/6W
R513	1-247-867-00	CARBON	33K	5%	1/6W
R514	1-247-821-00	CARBON	390	5%	1/6W
R515	1-247-867-00	CARBON	33K	5%	1/6W
R516	1-247-821-00	CARBON	390	5%	1/6W
R517	1-247-867-00	CARBON	33K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R518	1-247-821-00	CARBON	390	5%	1/6W
R519	1-247-867-00	CARBON	33K	5%	1/6W
R520	1-247-821-00	CARBON	390	5%	1/6W
R521	1-247-835-00	CARBON	1.5K	5%	1/6W
R522	1-247-882-00	CARBON	130K	5%	1/6W
R523	1-247-833-00	CARBON	1.2K	5%	1/6W
R524	1-247-884-00	CARBON	160K	5%	1/6W
R525	1-247-835-00	CARBON	1.5K	5%	1/6W
R526	1-247-882-00	CARBON	130K	5%	1/6W
R527	1-247-835-00	CARBON	1.5K	5%	1/6W
R528	1-247-882-00	CARBON	130K	5%	1/6W
R529	1-247-835-00	CARBON	1.5K	5%	1/6W
R530	1-247-882-00	CARBON	130K	5%	1/6W
R531	1-247-835-00	CARBON	1.5K	5%	1/6W
R532	1-247-883-00	CARBON	150K	5%	1/6W
R533	1-247-835-00	CARBON	1.5K	5%	1/6W
R534	1-247-882-00	CARBON	130K	5%	1/6W
R535	1-247-835-00	CARBON	1.5K	5%	1/6W
R536	1-247-882-00	CARBON	130K	5%	1/6W
R537	1-247-835-00	CARBON	1.5K	5%	1/6W
R538	1-247-882-00	CARBON	130K	5%	1/6W
R539	1-247-835-00	CARBON	1.5K	5%	1/6W
R540	1-247-882-00	CARBON	130K	5%	1/6W
R541	1-247-807-00	CARBON	100	5%	1/6W
R542	1-247-807-00	CARBON	100	5%	1/6W
R543	1-247-807-00	CARBON	100	5%	1/6W
R544	1-247-807-00	CARBON	100	5%	1/6W
R545	1-247-807-00	CARBON	100	5%	1/6W
R546	1-247-807-00	CARBON	100	5%	1/6W
R547	1-247-807-00	CARBON	100	5%	1/6W
R548	1-247-807-00	CARBON	100	5%	1/6W
R549	1-247-807-00	CARBON	100	5%	1/6W
R550	1-247-807-00	CARBON	100	5%	1/6W
R551	1-247-882-00	CARBON	130K	5%	1/6W
R552	1-247-882-00	CARBON	130K	5%	1/6W
R553	1-247-882-00	CARBON	130K	5%	1/6W
R554	1-247-882-00	CARBON	130K	5%	1/6W
R555	1-247-882-00	CARBON	130K	5%	1/6W
R556	1-247-882-00	CARBON	130K	5%	1/6W
R557	1-247-882-00	CARBON	130K	5%	1/6W
R558	1-247-882-00	CARBON	130K	5%	1/6W
R559	1-247-882-00	CARBON	130K	5%	1/6W
R560	1-247-885-00	CARBON	180K	5%	1/6W
R561	1-247-807-00	CARBON	100	5%	1/6W
R562	1-247-807-00	CARBON	100	5%	1/6W

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CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R563	1-247-807-00	CARBON	100	5%	1/6W	
R564	1-247-807-00	CARBON	100	5%	1/6W	
R565	1-247-807-00	CARBON	100	5%	1/6W	
R566	1-247-807-00	CARBON	100	5%	1/6W	
R567	1-247-807-00	CARBON	100	5%	1/6W	
R568	1-247-807-00	CARBON	100	5%	1/6W	
R569	1-247-807-00	CARBON	100	5%	1/6W	
R570	1-247-807-00	CARBON	100	5%	1/6W	
R571	1-247-879-00	CARBON	100K	5%	1/6W	
R572	1-247-879-00	CARBON	100K	5%	1/6W	
R573	1-247-879-00	CARBON	100K	5%	1/6W	
R574	1-247-879-00	CARBON	100K	5%	1/6W	
R575	1-247-879-00	CARBON	100K	5%	1/6W	
R576	1-247-879-00	CARBON	100K	5%	1/6W	
R577	1-247-879-00	CARBON	100K	5%	1/6W	
R578	1-247-879-00	CARBON	100K	5%	1/6W	
R579	1-247-879-00	CARBON	100K	5%	1/6W	
R580	1-247-879-00	CARBON	100K	5%	1/6W	
R581	1-247-879-00	CARBON	100K	5%	1/6W	
R582	1-247-879-00	CARBON	100K	5%	1/6W	
R583	1-247-879-00	CARBON	100K	5%	1/6W	
R584	1-247-879-00	CARBON	100K	5%	1/6W	
R585	1-247-879-00	CARBON	100K	5%	1/6W	
R586	1-247-879-00	CARBON	100K	5%	1/6W	
R587	1-247-879-00	CARBON	100K	5%	1/6W	
R588	1-247-879-00	CARBON	100K	5%	1/6W	
R589	1-247-879-00	CARBON	100K	5%	1/6W	
R590	1-247-879-00	CARBON	100K	5%	1/6W	
R591	1-247-903-00	CARBON	1M	5%	1/6W	
R592	1-247-903-00	CARBON	1M	5%	1/6W	
R593	1-247-903-00	CARBON	1M	5%	1/6W	
R594	1-247-903-00	CARBON	1M	5%	1/6W	
R595	1-247-903-00	CARBON	1M	5%	1/6W	
R596	1-247-903-00	CARBON	1M	5%	1/6W	
R597	1-247-903-00	CARBON	1M	5%	1/6W	
R598	1-247-903-00	CARBON	1M	5%	1/6W	
R599	1-247-903-00	CARBON	1M	5%	1/6W	
R600	1-247-903-00	CARBON	1M	5%	1/6W	
R601	1-247-857-00	CARBON	12K	5%	1/6W	
R602	1-247-879-00	CARBON	100K	5%	1/6W	
R603	1-247-891-00	CARBON	330K	5%	1/6W	
R604	1-247-891-00	CARBON	330K	5%	1/6W	
R605	1-247-897-00	CARBON	560K	5%	1/6W	
R606	1-247-859-00	CARBON	15K	5%	1/6W	
R607	1-247-857-00	CARBON	12K	5%	1/6W	

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R608	1-247-874-00	CARBON	62K	5%	1/6W	
R609	1-247-841-00	CARBON	2.7K	5%	1/6W	
R610	1-247-839-00	CARBON	2.2K	5%	1/6W	
R611	1-247-855-00	CARBON	10K	5%	1/6W	
R612	1-247-853-00	CARBON	8.2K	5%	1/6W	
R613	1-247-863-00	CARBON	22K	5%	1/6W	
R614	1-247-838-00	CARBON	2K	5%	1/6W	
R615	1-247-855-00	CARBON	10K	5%	1/6W	
R616	1-247-839-00	CARBON	2.2K	5%	1/6W	
R617	1-247-839-00	CARBON	2.2K	5%	1/6W	
R618	1-247-863-00	CARBON	22K	5%	1/6W	
R619	1-247-863-00	CARBON	22K	5%	1/6W	
R620	1-247-863-00	CARBON	22K	5%	1/6W	
R621	1-247-839-00	CARBON	2.2K	5%	1/6W	
R622	1-247-863-00	CARBON	22K	5%	1/6W	
R623	1-247-863-00	CARBON	22K	5%	1/6W	
R624	1-247-863-00	CARBON	22K	5%	1/6W	
R625	1-247-863-00	CARBON	22K	5%	1/6W	
R626	1-247-863-00	CARBON	22K	5%	1/6W	
R627	1-247-863-00	CARBON	22K	5%	1/6W	
R628	1-247-871-00	CARBON	47K	5%	1/6W	
R629	1-247-871-00	CARBON	47K	5%	1/6W	
R630	1-247-838-00	CARBON	2K	5%	1/6W	
R631	1-247-838-00	CARBON	2K	5%	1/6W	
R632	1-247-879-00	CARBON	100K	5%	1/6W	
R633	1-247-879-00	CARBON	100K	5%	1/6W	
R634	1-247-879-00	CARBON	100K	5%	1/6W	
R635	1-247-831-00	CARBON	1K	5%	1/6W	
R636	1-247-831-00	CARBON	1K	5%	1/6W	
R637	1-247-831-00	CARBON	1K	5%	1/6W	
R638	1-247-799-00	CARBON	47	5%	1/6W	
R639	1-247-799-00	CARBON	47	5%	1/6W	
R640	1-247-799-00	CARBON	47	5%	1/6W	
R641	1-247-863-00	CARBON	22K	5%	1/6W	
R642	1-247-850-00	CARBON	6.2K	5%	1/6W	
R643	1-247-903-00	CARBON	1M	5%	1/6W	
R644	1-247-897-00	CARBON	560K	5%	1/6W	
R645	1-247-855-00	CARBON	10K	5%	1/6W	
R646	1-247-862-00	CARBON	20K	5%	1/6W	
R647	1-247-831-00	CARBON	1K	5%	1/6W	
R648	1-247-847-00	CARBON	4.7K	5%	1/6W	
R649	1-247-858-00	CARBON	13K	5%	1/6W	
R650	1-247-847-00	CARBON	4.7K	5%	1/6W	
R651 ⚠	1-217-383-00	FUSIBLE	4.7	5%	1/4W	F
R652	1-247-137-00	CARBON	1.8K	5%	1/4W	

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SEMICONDUCTORS

In each case, U : µ, for example:
UA···: µA···, UPA···: µPA···, UPC···: µPC, UPD···: µPD···

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R653	1-247-823-00	CARBON	470	5%	1/6W	
R654	1-247-831-00	CARBON	1K	5%	1/6W	
R655	1-247-849-00	CARBON	5.6K	5%	1/6W	
R656 ⚠	1-217-383-00	FUSIBLE	4.7	5%	1/4W	F
R657	1-247-137-00	CARBON	1.8K	5%	1/4W	
R658 ⚠	1-247-075-00	CARBON	2.2	5%	1/4W	F
R659	1-247-137-00	CARBON	1.8K	5%	1/4W	
R660	1-247-831-00	CARBON	1K	5%	1/6W	
R661	1-247-831-00	CARBON	1K	5%	1/6W	
R662	1-247-847-00	CARBON	4.7K	5%	1/6W	
R663	1-247-847-00	CARBON	4.7K	5%	1/6W	
R664	1-247-847-00	CARBON	4.7K	5%	1/6W	
R665	1-247-871-00	CARBON	47K	5%	1/6W	
R666	1-247-823-00	CARBON	470	5%	1/6W	
R751	1-247-863-00	CARBON	22K	5%	1/6W	
R752	1-247-863-00	CARBON	22K	5%	1/6W	
R753	1-247-863-00	CARBON	22K	5%	1/6W	
R754	1-247-863-00	CARBON	22K	5%	1/6W	
R755	1-247-863-00	CARBON	22K	5%	1/6W	
R756	1-247-863-00	CARBON	22K	5%	1/6W	
R757	1-247-863-00	CARBON	22K	5%	1/6W	
R758	1-247-863-00	CARBON	22K	5%	1/6W	
R759	1-247-823-00	CARBON	470	5%	1/6W	
R760	1-247-807-00	CARBON	100	5%	1/6W	
R761	1-247-855-00	CARBON	10K	5%	1/6W	
R762	1-247-903-00	CARBON	1M	5%	1/6W	
R763	1-247-903-00	CARBON	1M	5%	1/6W	
R764	1-247-903-00	CARBON	1M	5%	1/6W	
R765	1-247-867-00	CARBON	33K	5%	1/6W	
R766	1-247-903-00	CARBON	1M	5%	1/6W	
R767	1-247-903-00	CARBON	1M	5%	1/6W	
RV201	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K				
RV202	1-228-995-00	RES, ADJ, METAL GLAZE 22K				
RV501	1-228-990-00	RES, ADJ, METAL GLAZE 1K				
RY501 ⚠	1-515-516-00	RELAY				
S1	1-555-856-00	SWITCH, KEY BOARD, 31.5HZ +				
S2	1-555-856-00	SWITCH, KEY BOARD, 63HZ +				
S3	1-555-856-00	SWITCH, KEY BOARD, 125HZ +				
S4	1-555-856-00	SWITCH, KEY BOARD, 250HZ +				
S5	1-555-856-00	SWITCH, KEY BOARD, 500HZ +				
S6	1-555-856-00	SWITCH, KEY BOARD, 1KHZ +				
S7	1-555-856-00	SWITCH, KEY BOARD, 2KHZ +				
S8	1-555-856-00	SWITCH, KEY BOARD, 4KHZ +				
S9	1-555-856-00	SWITCH, KEY BOARD, 8KHZ +				

ELECTRICAL PARTS

Ref.No.	Part No.	Description
S10	1-555-856-00	SWITCH, KEY BOARD, 16KHZ +
S11	1-555-856-00	SWITCH, KEY BOARD, 31.5HZ -
S12	1-555-856-00	SWITCH, KEY BOARD, 63HZ -
S13	1-555-856-00	SWITCH, KEY BOARD, 125HZ -
S14	1-555-856-00	SWITCH, KEY BOARD, 250HZ -
S15	1-555-856-00	SWITCH, KEY BOARD, 500HZ -
S16	1-555-856-00	SWITCH, KEY BOARD, 1KHZ -
S17	1-555-856-00	SWITCH, KEY BOARD, 2KHZ -
S18	1-555-856-00	SWITCH, KEY BOARD, 4KHZ -
S19	1-555-856-00	SWITCH, KEY BOARD, 8KHZ -
S20	1-555-856-00	SWITCH, KEY BOARD, 16KHZ -
S21	1-555-856-00	SWITCH, KEY BOARD, START
S22	1-555-856-00	SWITCH, KEY BOARD, LEVEL +
S23	1-555-856-00	SWITCH, KEY BOARD, LEVEL -
S24	1-555-856-00	SWITCH, KEY BOARD, TAPE 1 INPUT
S25	1-555-856-00	SWITCH, KEY BOARD, AUX 2 INPUT
S26	1-555-856-00	SWITCH, KEY BOARD, AUX 1 INPUT
S27	1-555-856-00	SWITCH, KEY BOARD, LINE INPUT
S28	1-555-856-00	SWITCH, KEY BOARD, AEQ EQ
S29	1-555-856-00	SWITCH, KEY BOARD, LINE OUT EQ
S30	1-555-856-00	SWITCH, KEY BOARD, OFF EQ
S31	1-555-856-00	SWITCH, KEY BOARD, REC OUT EQ
S32	1-555-856-00	SWITCH, KEY BOARD, FIXED MEMORY A
S33	1-555-856-00	SWITCH, KEY BOARD, FIXED MEMORY B
S34	1-555-856-00	SWITCH, KEY BOARD, MEMORY 1
S35	1-555-856-00	SWITCH, KEY BOARD, MEMORY 2
S36	1-555-856-00	SWITCH, KEY BOARD, FIXED MEMORY C
S37	1-555-856-00	SWITCH, KEY BOARD, FIXED MEMORY FLAT
S38	1-555-856-00	SWITCH, KEY BOARD, MEMORY 3
S39	1-555-856-00	SWITCH, KEY BOARD, MEMORY 4
S40	1-555-856-00	SWITCH, KEY BOARD, AUX 2 REC OUT
S41	1-555-856-00	SWITCH, KEY BOARD, AUX 1 REC OUT
S42	1-555-856-00	SWITCH, KEY BOARD, LINE REC OUT
S43	1-555-856-00	SWITCH, KEY BOARD, LINE OUT REC
S44	1-555-856-00	SWITCH, KEY BOARD, TAPE 2 INPUT
S45	1-555-856-00	SWITCH, KEY BOARD, TAPE1-2 REC OUT
S46	1-555-856-00	SWITCH, KEY BOARD, TAPE2-1 REC OUT
S47	1-555-856-00	SWITCH, KEY BOARD, MEMORY SET
S701	1-553-856-00	SWITCH, KEY BOARD
S702	1-553-856-00	SWITCH, KEY BOARD
S703	1-553-856-00	SWITCH, KEY BOARD
S704	1-553-856-00	SWITCH, KEY BOARD
S705	1-553-856-00	SWITCH, KEY BOARD
S706	1-553-856-00	SWITCH, KEY BOARD
S707	1-553-856-00	SWITCH, KEY BOARD

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

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ELECTRICAL PARTS

Ref.No.	Part No.	Description
S801	1-553-164-00	SWITCH, SLIDE
S901 ⚠	1-552-535-00	(AEP,E)...SWITCH, POWER & VOLTAGE CHANGE
T501 ⚠	1-447-881-11	(AEP,E).....TRANSFORMER, POWER
T501 ⚠	1-447-879-11	(US,Canadian)...TRANSFORMER, POWER
T801 ⚠	1-447-882-11	(AEP,E).....TRANSFORMER, POWER
T801 ⚠	1-447-880-11	(US,Canadian)...TRANSFORMER, POWER
TB301	*1-535-116-00	TERMINAL
TB302	*1-535-117-00	TERMINAL
TB501	*1-535-115-00	TERMINAL
TB502	1-535-136-00	BASE POST 14MM (10MM PITCH) 3P
X501	1-527-532-00	OSCILLATOR, CERAMIC
X502	1-567-160-00	OSCILLATOR, CERAMIC

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TROUBLE CHECKS

Should any problem persist after you have made these checks, consult your nearest Sony service facility. Before going through the check list below, first refer back to the connection and operating procedures.

No audio even when the POWER switch is pressed.
- Power cord is disconnected.
- Connecting cord is disconnected.
- Incorrect connection.
- Wrong INPUT SELECTOR button is pressed.
- Output level of the SEQ-555ES is set to minimum.

No equalization
- EQUALIZATION OFF key is pressed.

Beep sound
- Equalization mode is changed from ±12dB display including more than 8dB indication to ±6dB display.

Equalization mode is automatically changed to ±12dB display
- More than 8dB indication is included in the equalization curve stored in the MEMORY key.
- Indication becomes more than 8dB when the FIXED MEMORY key is pressed.

No recording
- Wrong REC OUT SELECTOR button is pressed.

No key-input
- REMOTE SENSOR is lit.
- During automatic sound field adjustment.

The AUTO EQ START button does not operate.
- Microphone is not connected.

9-951-427-11

English
84G04101-1
Printed in Japan
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